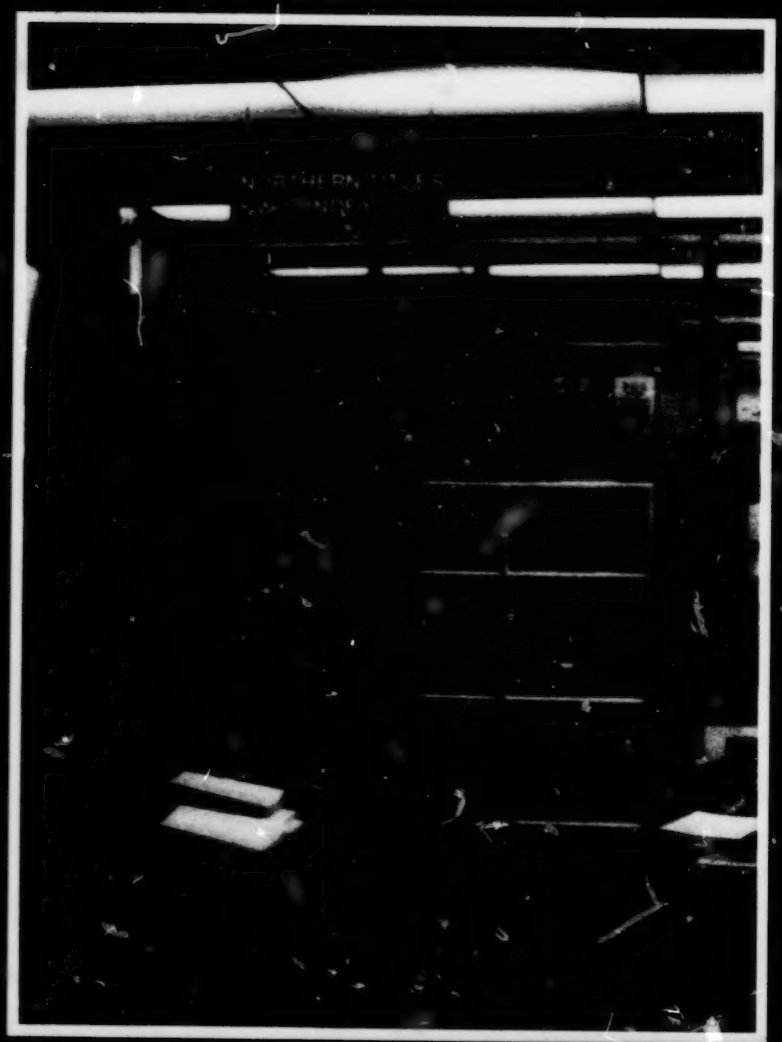
University of Alberta

Boreal Institute for Northern Studies

Annual Report 1989



Boreal Institute for Northern Studies
University of Alberta
G-213 Biological Sciences Building
Edmonton, Alberta, Canada T6G 2E9

Telephone: Director (403) 492-3733
Research Library (403) 492-4409
Researchers: (403) 492-1799
Administrative Office (403) 492-4512, 4999 or 2919
FAX (403) 492-1153
TELEX: 037-2979 (R. Wein, Boreal Institute)
Electronic Mail: BINS@UALTAMTS
ENVOY 100: ILL.BOREAL

ISSN: 0836-1274

Cover Photo: The newly-renovated Research Library holds a collection of 200,000 items from a wide range of disciplines.

91-04359/

Annual Report

1989

CONTENTS

Northern Studies at the University of Alberta 2
General Information on the Boreal Institute for Northern Studies 4
Mandate 4
Advisory Board 4
Personnel 4
Facilities 5
Research Library 5
Research Laboratories 6
Programs 7
Research Grants and Scholarships 7
Publications 8
Conferences 8
Networking 8
Services to Northern Communities, Government, and Industry 9
International Links 9

The Year 1989 10
Advisory Board 10
Personnel 10
Research Support Staff 10
Researchers 11
Research Co-operators 12
Personnel Changes 12
Facilities and Services 13
Research Library 13
Research Laboratories 13
Field Stations 13
Programs 14
Research Program 14
Current Interdisciplinary Research Projects 14
Researcher Profiles 18
Research Grants and Scholarships 30
Boreal Alberta Research Grants 30
DIAND Northern Studies Training Grants 31
Northern Dene Language Scholarship 32
Kennett Y. Spencer Memorial Scholarship 32
Publications Program 33
Occasional Publications Series 33
Circumpolar Research Series 33
Researcher Publications 33
Refereed Journal Publications 33
Conference Proceedings and Chapters in Books 35
Abstracts and Reviews 36
Other publications 37
Theses (Institute-Sponsored Research) 38
Conferences and Workshops Program 39
Networking and External Relations Program 40
Finances 41
Appendix A — Biological Sciences Seminar Series 43
Appendix B — Social Sciences Seminar Series 43

A MESSAGE FROM THE DIRECTOR

The University of Alberta is well-known for faculty and graduate students who contribute to a wide range of northern-oriented research in varied academic disciplines. This research is carried out through most departments as well as through special units such as the Centre for Frontier Engineering Research, the School of Native Studies, the Canadian Studies Program, and the Boreal Institute for Northern Studies.

The Boreal Institute has a mandate to support northern research and the dissemination of research results through publications, conferences, and other information transfer activities. The networking/external relations program fosters links within the University community through such mechanisms as the annual Open House and monthly Newsletters. Links with national and international organizations are enhanced with regular exchange of library materials and the development of co-operative research programs. The Institute's conferences and publications programs are other mechanisms used for the transfer of information and networking.

The research program constitutes the greater part of the Institute's activities and budget. In 1989 the research grants committee distributed, on a peer-review basis, approximately $110,000 in Boreal Alberta Research Grants to 30 individuals and $63,000 in Northern Science Training Grants to 22 senior undergraduate and graduate students. These are conditional grants from the provincial and federal governments, respectively.

The research grants are generally committed to individual research projects, although there is a growing emphasis on the support and encouragement of interdisciplinary team projects. The subject matter covered in these co-operative efforts varies, as these current research project titles demonstrate: Climate Change; Terrestrial and Marine Renewable Resource Management; Toward the Establishment of a Canadian Polar Information System. These research activities continue to attract researchers both within the University of Alberta, and from universities, government research organizations, the private sector in Alberta, and beyond.

A research program of this magnitude requires both a general infrastructure and support services. The Research Library was upgraded this year with extensive renovations to the facility, the purchase of computer and other equipment, and the revision of policies and procedures to improve services. The laboratory facilities were also upgraded with the purchase of field and bench equipment, computer hardware, and some specialized laboratory equipment to better support the research program.

As we advance into the new year, we look forward to establishing stronger links with other national northern and circumpolar organizations, through the development of formal research exchange programs. These will assist in building strong interdisciplinary research teams that can address critical issues of interest to Northerners and researchers alike.

On behalf of the Institute, I would like to express my appreciation for the continued support of the University of Alberta, and for the vote of confidence expressed by researchers who maintained their affiliation or who joined the Institute over the past year. Appreciation is also expressed to members of the Advisory Board and program committees, and finally, to support staff members who have answered the challenge of their expanded roles resulting from the increased demand for research services.

Ross W. Wein
Director

NORTHERN STUDIES AT THE UNIVERSITY OF ALBERTA

The City of Edmonton is recognized as the "Gateway to the North," the most northern provincial capital, and more recently as an international "Winter City." The University of Alberta has having strong links with the North, offering a variety of advantages for northern research, largely dictated by geographic location. The intrinsic strengths of the University are the broad base of interests of its academic staff, relevant course offerings at undergraduate and graduate levels, strong graduate programs in northern-related research, and excellent facilities.

The University of Alberta has, since its establishment in 1918, demonstrated a strong commitment to northern studies, supporting such units as the School of Native Studies which co-ordinates courses dealing with Native culture, land issues, and languages; the Centre for Frontier Engineering Research, providing a focal point for engineering problems related to arctic and offshore research and development; the Office of Native Student Affairs providing information and other services to Native students; the Canadian Institute for Nordic Studies promoting multidisciplinary and cultural links with Nordic countries; and the Boreal Institute for Northern Studies encouraging and supporting multidisciplinary research on the North.

Personnel

The University can boast an impressive list of northern specialists from many disciplines (approximately 150 faculty members and associated research staff), who conduct northern research in their area of expertise. Every year more than 100 graduate students, visiting scientists, post-doctoral fellows, and co-operative researchers pursue northern studies through incentives such as exchange and scholarship programs.

Facilities

The University of Alberta library system is the second largest in Canada, containing approximately 3,200,000 volumes. A northern strength is natural, given the geographic location of the University. The main collections are housed in Cameron Library (Sciences), Rutherford Library (Humanities), Law and Education Buildings, the Walter C. MacKenzie Health Sciences Centre, and the Faculté St. Jean (French).

Specialized laboratories, controlled environment chambers, ice and wind tunnels, low temperature rooms, and greenhouse facilities are maintained. Some departments maintain field and/or satellite research stations in northern forest and arctic tundra regions to provide appropriate facilities and equipment for specialized research.

Teaching and Research

The University, through such departments as Anthropology, Botany, Civil Engineering, Education, Geography, Zoology, and programs such as Native studies and Canadian studies consistently offers northern-oriented courses. Other teaching departments list courses on such specialized topics as Native languages and Inuit art, clothing, and textiles on a less regular basis. The Faculty of Extension also offers non-credit classes and supports long-distance education in the North.

Faculty members conduct research on both basic and applied subjects. Northern research was especially active in the early 1970s with the expansion of the oil industry from northern Alberta to the Arctic Islands, linking engineering and the biological sciences in environmentally focussed research. More recently, northern research has expanded in the social, medical, and educational fields as northern residents gain additional political responsibility for many aspects of northern life.

Basic research is funded largely through the federal granting councils: Natural Sciences and Engineering Research Council (NSERC), Social Sciences and Humanities Research Council (SSHRC), and the Medical Research Council (MRC). Some research programs are conducted in cooperation with such provincial or federal government departments as National Health and Welfare, the Canadian Wildlife Service; Indian Affairs and Northern Development; Energy, Mines and Resources; or private foundations and businesses. Applied projects may be undertaken under contract or grant programs. Special studies are sometimes commissioned by the people of the North, usually on applied problems that have direct implications for Northerners.

Further information can be obtained from the current University Calendar (available from the Registrar's Office, Administration Building — 492-3113), or by contacting the appropriate faculty, institute, department, or centre directly.

GENERAL INFORMATION ON THE BOREAL INSTITUTE FOR NORTHERN STUDIES

Founded in 1960, the Boreal Institute for Northern Studies is an interdisciplinary unit charged with fostering northern studies in any academic discipline, and disseminating information about the circumpolar North, with a particular emphasis on northern Alberta and the Canadian North. The Institute offers an opportunity for staff from a wide range of disciplines to focus on applied and thematic problems of the North, thereby increasing understanding and awareness of them. It also provides a mechanism for formally involving representatives from government and industry in co-operative research programs. The Institute continues to strive toward excellence in northern studies in Canada in seeking to become a "Centre of Excellence for Circumpolar Research."

Mandate

The four-fold mandate, redefined in 1988, emphasizes the changing role of the Institute and northern research within the University of Alberta. The current mandate is to:

a) support scholarly research on the North in all academic disciplines by
   i) supporting graduate student research;
   ii) promoting co-operative, interdisciplinary research;
   iii) maintaining a specialized northern research library, research facilities, laboratory and office space, and equipment;
b) foster communication among northern-oriented researchers through workshops and conferences;
c) disseminate knowledge about the North through publications and other media;
d) encourage involvement of Northerners in the activities of the Institute, in identifying problems and seeking solutions.

Advisory Board

The Institute is governed by an Advisory Board, comprised of representatives of the University of Alberta, government agencies, and the private sector. The Advisory Board reports to the Vice-President (Research) via the Associate Vice-President (Research) or designate, guides and assists the Director in policy and program development and implementation.

Personnel

Support staff provide assistance to program committees for research, publications, conferences/workshops, and networking, as well as the development and maintenance of research library and laboratory services.

Researchers (working within the Institute) and Research Co-operators (involved in specific research projects) are appointed to enhance multidisciplinary studies. Northern specialists at the University are appointed as Adjunct Professors; co-operative research efforts are encouraged through the sponsoring or funding of joint projects with national and international collaborators. Off-campus professionals with complementary backgrounds in northern research are encouraged to participate in programs and activities. Visiting researchers are also welcome. This core of researchers conducts studies under the auspices of the Institute, representing it at conferences, where the results of their work are communicated to outside groups.

Findings published in national and international peer-reviewed journals, or as part of the Institute's publication series, further enhance this information transfer.

Institute resources (i.e., space, equipment, time) are available to researchers. Permanent research staff are supported financially; affiliated researchers are provided office and research space, clerical support, duplicating, and library services (see below). The Institute also provides some laboratory and field equipment, computer support, and research materials.

Researchers are informed regularly of upcoming events, grant deadlines, and other matters of interest. Under the auspices of the Institute, they are eligible to apply for funding from other granting agencies. Assistance is given to international researchers requiring logistical support, licences, and equipment.

Facilities

Research Library

One of the first major projects undertaken in 1960 was the development of a specialized library and information centre. The library is now a recognized world-class collection, housing some 200,000 current and historical materials in a wide range of formats. The major formats are: periodicals, newspapers, newsletters (70%); gray literature, including consultants' reports and conference proceedings (10%); monographs, including reference materials (15%), and theses (5%). Geographic emphasis, as indicated by financial commitment, is: western Canadian Arctic (35%); eastern Canadian Arctic (20%); northern provinces (10%); Alaska (10%); Scandinavia, including Greenland (10%); cold regions (10%); USSR (5%); Antarctic (Trace).

A facility for scholars engaged in northern research and a public information service to anyone interested in the North, the collection encompasses materials at all reading levels and in all disciplines. The main area of interest for research projects funded by the Institute is northern Alberta and the western Canadian Arctic. However, the library's collection covers a broad spectrum of all areas of the circumpolar North and is particularly strong in materials on the western Canadian Arctic, Alaska, and Canadian Native peoples. In addition, material of comparative interest, such as studies of Antarctic and other cold regions is collected, and a special attempt is made to acquire "gray" literature.

The University Library contains the basic subject material for a diverse range of topics, providing the Boreal Library with a solid foundation for its special collection. Since these two systems share much of the same clientele, the Boreal Library works actively to avoid duplication of resources, except where need or use patterns make duplication important. Specific areas of the collection have been emphasized over the years. In the first years a special effort was made to acquire historical accounts of the various Arctic expeditions. More recently, the collection emphasis has been on the acquisition of ephemerals: newspapers and newsletters published by the various communities in the Northwest Territories and the Yukon, and by Native groups in Canada. Special efforts are made to acquire master's and doctoral theses on the Canadian North. The library also has a substantial collection of government documents on Native land claims and environmental and other studies resulting from oil or gas pipeline proposals. Other special materials include: Native curriculum materials, films and other audiovisial materials, pipeline documents, children's books, and travel

guides. The library houses several special collections, including the Scotter collection.

Database

The nature of the collection has necessitated the in-house development of several specialized research tools. With privileged access to some of the best computer power and expertise in Canada the Institute has, since 1970, been a willing participant in developing indexes and cataloguing applications. Two of the best-known applications are the Northern Titles KWIC Index, ongoing since 1972, soon to be available on-line through QL systems; and the BOREAL database, developed in 1977 using the SPIRES database management system and available on-line since 1985 through CAN/OLE.

The BOREAL database, established in 1978 as the library catalogue, contains references to all items catalogued since that time (currently over 40,000 records). The card catalogue was closed in 1985, and access to the collection is through the database. Several indexes have improved access, and analytics give access to articles in periodicals and chapters in books.

Services

Though the majority of users are on campus, the library is also open to the general public and residents of the Yukon and the Northwest Territories. Besides the usual services of circulation and interlibrary loans, the library provides selective dissemination of information (SDI) services to the Institute's researchers, as well as more detailed services such as bibliographic verification and specialized online searches of the BOREAL database.

Networking/exchanges

The Boreal Institute maintains a modest list of publications that are exchanged with other institutes and centres for their publications; many of the library's holdings of northern periodicals are acquired in this way.

International links

Ties with northern libraries in Scandinavia and Alaska, as well as with the Scott Polar Research Institute have been cultivated and maintained over the years. International co-operation has been greatly enhanced by the meetings of the Northern Libraries Colloquy, which have been used to make and reconfirm formal and informal exchange agreements.

Publications

The Library Bulletin, produced monthly, contains references to new items catalogued for the library collection. Since some of the older material is being recatalogued and entered into the database, references to previously held material are also included. The Library also produces a Northern Titles KWIC Index based on headlines from Native and northern newspapers; first-named authors and titles from journal articles; government documents; and other ephemera received by the library. Conceived as a current awareness service, the index also serves an vital long-term use.

Research Laboratories

A total of 700 m^2 of temporary research laboratory and office space is currently held in the South Lab Building. With the Institute as a focal point for northern research at the University of Alberta, long-term plans are aimed at providing central research facilities, equipment, and services for the programs it supports. Standard equipment and some specialized units such as walk-in freezers are provided in the wet and dry laboratories.

The Institute does not operate northern field stations but co-operates with other departments, institutes, and agencies already maintaining facilities. The Meanook Biological Research Station, operated by the Department of Zoology, in northern Alberta; the Kluane and Devon stations operated by the Arctic Institute of North America in the western arctic and subarctic; the Inuvik Research Centre and the Iqaluit Research Laboratory of the Science Institute of the Northwest Territories; and the Tuktoyaktuk base of the Polar Continental Shelf Project are all excellent facilities.

Programs

Research Program goals emphasize and encourage the initiation of multidisciplinary and interdisciplinary projects, generally reflecting the needs of Northerners. In the early 1970s, for example, research in the physical and biological sciences increased with oil exploration activities; later concerns about constitutional reform and social services led to increased research in the social sciences. The most recent trend is toward programs conducted by research teams examining the diverse aspects of important issues best resolved through multidisciplinary approaches such as health care delivery, cross-cultural education, traditional knowledge, climate change, political devolution, and natural resource utilization.

Research Grants and Scholarships

The Research Grants Program was established to provide annual funds, on a competitive basis, as "seed money" to initiate northern projects. All qualified researchers compete equally for research funds; however, graduate students benefit most from these programs by gaining experience and training in northern research activities and proposal development.

Boreal Alberta Research Grants: Funded on an annual basis, originally by the Province of Alberta and now through the University Operating Budget, these grants support northern field research and research on northern subjects. The geographic area of focus is the Canadian boreal forest and Canadian arctic, especially northern Alberta; the Yukon; and the Northwest Territories. The grants are tenable for up to two years, commencing April 1, and are open to graduate students, post-doctoral fellows, or full-time academic staff of the University of Alberta, an affiliated college, or another university in Alberta. Other residents of Alberta, the western Northwest Territories, and the Yukon are also eligible to apply. Deadline for submission of completed application forms is December 20 of the year preceding the competition.

Northern Science Training Grants: This program of the federal Department of Indian Affairs and Northern Development provides funding to northern studies committees at Canadian universities. At the University of Alberta, the Boreal Institute administers the allocated funds. The grants, tenable for one year commencing April 1, provide travel and subsistence funds to train graduate students in northern research. The geographic area of focus is the Canadian area north of the southern limit of the discontinuous permafrost zone. These grants are open to Canadian graduate students and fourth-year undergraduate students of the University of Alberta in a program leading to northern specialization. Special consideration is given to students working within multidisciplinary and collaborative projects. Deadline for submission of completed application forms is November 15 of the year preceding the competition.

The Kennett Y. Spencer Memorial Scholarship: This is open to residents of the North (northern Alberta as defined by Northern Alberta Development Council Area, Northwest Territories, and Yukon). The award is granted annually to a senior undergraduate or graduate student at the University of Alberta for high academic attainment and original research carried out in any discipline pertaining to northern studies. Deadline for submission of completed applications is April 15 of the year of competition.

Publications

The Publication Program emphasizes the importance of peer-reviewed manuscript publishing and strives for uniformity and quality in the series produced. The Occasional Publication Series was established as a forum for the publication of conference proceedings, collections of papers, or monographs resulting from scholarly research projects. Established in 1988, the Circumpolar Research Series accepts book-length monographs focussing primarily, but not exclusively, on interdisciplinary scholarly research in international circumpolar studies. Emphasis is on the contribution of a new understanding, synthesis, and/or awareness of circumpolar northern situations and problems. Provision may be made in either series for the publication of English translations of works in French, Russian, or the Scandinavian languages, especially where such publication can be supported by grants from the country of origin.

Conferences

The Conferences and Workshops Program offers support-in-kind and logistical support for activities falling within the mandate of the Institute. Generally, up to 2 major conferences and 3 workshops are sponsored and organized each year. Individuals wishing to organize a conference should submit a proposal to the Conference Committee. Conferences and workshops must be financially self-supporting.

Networking

The primary goal of Networking Program activities is to increase awareness of the Institute's research programs, first at the University of Alberta and then beyond it. The ultimate objectives are increased recognition of the Institute at national and international levels, and the promotion of northern research through exchange or co-operative programs and transfer activities. The Institute maintains membership in the Association of Canadian Universities for Northern Studies (ACUNS).

A monthly Newsletter is distributed to about 300 individuals, on and off campus, with an interest in northern studies. The annual Open House activities are aimed at encouraging graduate students to consider specializing in northern research and informing others about Institute activities. The Annual Report is designed to promote the Institute to international researchers and sister organizations.

At the community level, the Boreal Circle Society's primary goal is to foster public interest in the North. The Society acts as a "Friends of the Boreal Institute for Northern Studies" by promoting programs and activities to interested groups in the city and surrounding areas, as well as in northern communities. To this end, the Society sponsors lectures, film showings, and other media events and activities related to concerns of Northerners.

Services to Northern Communities, Government, and Industry

Institute researchers work closely with northern communities, special interest groups, and emerging government departments, also providing technical expertise to southern-based organizations concerned with northern resource or environmental issues. The Institute acts as a directory to individuals at the University who can respond to specific needs or inquiries by accessing information sources such as the database "UNIEXPERT" maintained by the Office of Research Services, which may be accessed through NETNORTH: userream@ualtamts.

International Links

Through networking activities, library exchanges, exchanges of scientists, and representation at international conferences, the Institute has developed many circumpolar links with international organizations. These links may be made at the level of the individual, the Institute, or the Advisory Board. Some of the more formal links are agreements or understandings established between institutes to promote co-operative efforts. The following are on-going agreements currently in place.

Center for Arctic Cultural Research—Umea University, Sweden. In 1987, the Boreal Institute agreed to co-operate with the Center of Arctic Cultural Research, Umea University, Sweden. The intent is to encourage exchanges of researchers who wish to take advantage of location and facilities available at another campus. Students, faculty, and visiting researchers with affiliation at either institute are eligible to apply. No financial implications exist under the terms of the agreement; however, the Center for Arctic Cultural Research will consider applications for financial assistance, or subsidized housing, which it may be able to provide.

Northern Regions Centre —Hokkaido University, Japan. In 1985, the Boreal Institute and the Northern Regions Centre, Sapporo began an exchange agreement concerning information/library exchanges, joint workshops, conferences, and research programs. In addition, each serves as a focal point in its respective province for northern regions studies and advice to students, researchers, and officials. Any member of the University community interested in northern Japan is eligible, provided that the issue falls under the research information or educational mandates of both institutes. Travel funds may be available for faculty through the Asia/Alberta Exchange Program of the Universities' Coordinating Council.

THE YEAR 1989

Advisory Board

Membership in December of 1989 was as follows:

K.E. Denford, B.Sc., Ph.D., Professor of Botany, Chair
Chair, Department of Botany, University of Alberta

M. Cleveland, President, Arctic College, Yellowknife, N.W.T.
G. Dacks, B.A., Ph.D., Professor of Political Science, University of Alberta
N.R. Morgenstern, B.A.Sc., D.Eng., Ph.D., Professor of Civil Engineering, University of Alberta
S. Richardson, B.Sc., R.N., M.Ed., Professor, Faculty of Nursing, University of Alberta
W.D. Roggensack, B.Sc., Ph.D., Vice-President (Planning and Marketing), C-FER, Edmonton
W. Slipchenko, Director of Circumpolar Affairs, Government of the N.W.T., Ottawa
I. Stirling, B.Sc., M.Sc., Ph.D., Fisheries and Environment, Canadian Wildlife Service, Edmonton
T.S. Veeman, B.Sc., B.A., Ph.D., Professor of Rural Economy, University of Alberta

Ex-officio:
R.L. Busch, B.A., M.A., Ph.D., Associate Vice-President (Research)
R.L. Minion, B.A., M.L.S., Head Librarian, Boreal Research Library
R.W. Wein, B.S.A., M.Sc., Ph.D., Director, Boreal Institute for Northern Studies

We acknowledge the following terms completed during the year:

M.M.R. Freeman, B.Sc., Ph.D., Senior Research Scholar and Henry Marshall Tory Professor of Anthropology
R.G. Ironside, B.A., Ph.D., Professor of Geography, University of Alberta
W.C. Mackay, B.Sc., B.Ed., M.Sc., Ph.D., Professor of Zoology, University of Alberta

Personnel

Research Support Staff

K. Barclay, Full-time temporary, Library Clerk (Cataloguing)
G.A. Cooke, B.Sc., B.L.S., Head Librarian (officially retires June 1990)
L. Davidson, Full-time temporary Library Clerk (July-December)
R.A. Ellis, B.Sc., M.Sc., Technologist II (Research)
H. Grau, Library Assistant (Acquisitions)
L. Hargrave, (Managing Editor of Publications)
B. Jones, Clerk Steno, (Networking and External Relations Officer)
L. Knapton, STEP student, Library Clerk (Shelving)
L. Mah, Lib. Tech. Diploma, Library Assistant (Cataloguing)
E.L.T. Maloney-Gignac, B.S.L., Executive Secretary
R.L. Minion, B.A., M.L.S., Head Librarian (Aug. 1)/Researcher (Database Development)
A. Moore, Administrative Assistant (Finance Officer)
L. Pickunyk, Lib. Tech. Diploma, Library Assistant (Acquisitions)

S. Rogiani, Senior Financial Records Clerk (Conferences and Workshops Co-ordinator)
E. Simpson, B.A., B.Ed., Library Assistant (Interlibrary loans, Research)
B. Stevens, Part-time continuing Library Clerk (Cataloguing)
R.W. Wein, B.S.A., M.Sc., Ph.D., Director

STEP Students: D.R. Priddle and S. Kemmett
SEED Students: S. Lapointe and K. Klapstein
Special Programs: J. Palframan, Library Clerk (July-August)

Researchers

A number of post-doctoral fellows and faculty members were attracted to our program this year, increasing our research team to the following:

M.I. Asch, B.A., M.A., Ph.D., Adjunct Professor (Anthropology)
J. Bednarski, B.Sc., M.Sc., Ph.D., Researcher (Geography)
E.E. Bielawski, B.A., Ph.D., Researcher (Anthropology)
S.A. Boutin, B.Sc., M.Sc., Ph.D., Adjunct Assistant Professor (Zoology)
L.N. Carbyn, B.A., M.Sc., Ph.D., Adjunct Researcher (Canadian Wildlife Service, Department of the Environment)
G. Dacks, B.A., Ph.D., Adjunct Professor (Political Science)
J. England, B.A., M.A., Ph.D., Adjunct Professor (Geography)
M.M.R. Freeman, B.Sc., Ph.D., Henry Marshall Tory Professor; Senior Research Scholar (Anthropology/Boreal Institute)
W.A. Fuller, B.A., M.A., Ph.D., Senior Research Scholar; Professor Emeritus (Zoology)
S. Greer, B.A., M.A., Visiting Researcher (Anthropology)
S.J. Hannon, B.Sc., M.Sc., Ph.D., Adjunct Associate Professor (Zoology)
G.H.R. Henry, B.Sc., MES., Ph.D., Adjunct Assistant Professor (Geography)
C.G. Hickey, B.A., M.A., Ph.D., Adjunct Professor (Anthropology)
E.H. Hogg, B.Sc., M.Sc., Ph.D., Researcher, NSERC Post-Doctoral Fellow (Forest Science)
R.J. Hudson, B.Sc., Ph.D., Adjunct Professor (Animal Science)
D. Kuiken, B.A., M.A., Ph.D., Adjunct Professor (Psychology)
L. Lange, B.A., M.A., Ph.D., Research Scholar, Canada Research Scholar (Philosophy)
W.C. Mackay, B.Sc., B.Ed., M.Sc., Ph.D., Adjunct Professor (Zoology)
P.A. McCormack, B.A. (Hons), M.A., Ph.D., Adjunct Researcher (Provincial Museum)
R.L. Minion, B.A., M.L.S., Head Librarian/Researcher (Database Development)
T.P. Murphy, B.Sc., M.Sc., Ph.D., Co-operative Researcher, National Waters Research Institute
E.E. Prepas, B.Math., M.Env.Stud., Ph.D., Adjunct Associate Professor (Zoology)
J. Roland, B.Sc., M.Sc., Ph.D., Researcher; NSERC Post-Doctoral Fellow (Botany)
N.W. Rutter, B.S., M.S., Ph.D., Adjunct Professor (Geology)
A. Schwarz, B.S., M.S., Ph.D., Researcher, NSERC Forestry Post-Doctoral Fellow (Forestry)
B.F. Schweger, B.Sc., M.Sc., Researcher (Clothing and Textiles)
C. Schweger, B.S., M.S., Ph.D., Adjunct Professor (Anthropology)
D. Stenton, B.A., M.A., Ph.D., Visiting Researcher, University of Alberta (Anthropology)

W.J. Vanast, F.R.C.P., M.D., Researcher, University of Alberta (Medicine/Neurology)
D. Wall, B.A., M.Ed., Ph.D., Visiting Researcher, Consultant Alberta Education
E.E. Wein, B.H.Sc., M.Sc., Ph.D., Researcher, Post-Doctoral Fellow NHRDP (Foods and Nutrition)
R.W. Wein, B.S.A., M.Sc., Ph.D., Director/Researcher (Forest Science/ Boreal Institute)

Short-term visiting researchers included:
J. Pathy, Ph.D., Jawaharlal Nehru University, New Delhi (Sociology) 09/01/89-12/31/89
T. Sweda, Ph.D., Nagoya University, Japan (Forestry), 01/21/89-04/15/89
L.N. Wakelyn, M.Sc., Northwest Territories Wildlife Management Branch, Yellowknife, 01/09/88-26/01/89
E.A. Young, Ph.D., The University of New South Wales, Australia, (Geography), 07/01/89-09/02/89

Research Co-operators

Research co-operators were largely attracted to on-going projects or those initiated by the Boreal Institute. Details of the projects and a list of co-operative researchers involved are included in the Research Program section of this report.

Personnel Changes

Academic Staff.

After 20 years as Head Librarian of the Boreal Research Library, Mrs. G.A. Cooke left the University, officially retiring in June 1990. As a result of her many accomplishments, not the least of which were the development of the Research Library; the BOREAL database; the KWIC Index; and the Yukon Bibliography, Mrs. Cooke received many honours. She was elected a Fellow of the Arctic Institute of North America, University of Calgary "in recognition of significant contributions to the knowledge of polar and subpolar regions," and made an honorary member of the Alaska Library Association "for co-founding the Northern Libraries Colloquy, our forum for northern information and co-operation." In September 1989, Ms. Robin Minion was appointed Head Librarian.

Support Staff

Mr. Robert Ellis replaced Mr. Joe Niederleitner as Research Technologist in January. Ms. Lori Pickunyk left her post as Library Technician in April; her position was filled by Ms. Helga Grau in October.

Research Staff

Dr. L. Lange was appointed Associate Professor at the University of Toronto (Scarborough Campus), leaving her position as Research Scholar. Dr. E. Bielawski transferred to the University of Victoria, where she will be stationed for the remainder of her term as Killam Fellow; however, she maintains her association with the Boreal Institute.

Facilities and Services

Research Library

The emphasis in 1989 was on upgrading the facilities and services of the Library. As one of the largest northern collections in the world, maintaining one of the few northern databases available nationally, the Boreal Research Library is a leader in specialized information systems. In the spring of 1989, the Library applied for and received funding from the University for renovations to the existing facility. In August, the Head Librarian undertook a major revision of library policies and procedures, in order to rationalize the collection and improve services. The renovations were completed in September and the policies implemented immediately. Once the collection has been fully rationalized, the acquisition policy will also be revised to further the mandate of the library in maintaining a collection as a complement to the holdings of University Library Systems.

Research Laboratories

In March 1989, the Institute applied for and received capital equipment funding. This was used to upgrade the laboratory facilities, establishing a general infrastructure for research programs by providing basic field and laboratory equipment, some specialized laboratory equipment, and computer facilities. The acquisition of generic materials is emphasized, but specialized equipment is acquired as demands dictate. For disciplinary studies, researchers are encouraged to use available facilities in other departments.

Field Stations

Increased co-operative efforts have enhanced ties with the Inuvik Research station of the Science Institute of the Northwest Territories and facilities maintained by the Arctic Institute and other stations. Polar Continental Shelf has also provided support through the use of the base facility at Tuktoyaktuk, and transportation support (helicopter time). Other field support is provided through many other agencies, either at a nominal fee or as support-in-kind.

Programs

Research Program

The Institute is a focal point for researchers interested in the North. While most research is funded through private foundations, government, and industry, the Institute engages in a limited amount of contract research. There is no singular northern regional focus, although a large part of the research is carried out in northern Alberta, the Yukon, and the Northwest Territories. Specialized research is encouraged, but emphasis is given to multidisciplinary or interdisciplinary research.

Current Interdisciplinary Research Projects

Climate and Environment of the Last Interglaciation (Isotope Stage 5e) in Arctic and Subarctic North America

Directors:
Dr. C. Schweger, Anthropology, University of Alberta
Dr. N.W. Rutter, Geology, University of Alberta
Co-operating Researchers:
Dr. L. Brubaker, Q.R.C., University of Washington, Seattle
Dr. B. Luckman, Geography, University of Western Ontario, London
Dr. L. Maher, Geology, University of Wisconsin, Madison
Dr. J.V. Matthews, Jr., Terrain Sciences Division, Geological Survey of Canada, Ottawa

Project CELIA is a multidisciplinary effort involving a thorough investigation of the last interglaciation, particularly in northern areas where the impact of future anthropogenic climate change is predicted to be the greatest. The proposed research will involve 3-4 teams of researchers who will conduct a coordinated study of key sites in Alaska, the Yukon, the Northwest Territories, northern Ontario, and Labrador. The primary objective will be to obtain paleoclimatic data from various types of climate proxy information, using numerical techniques such as those employed in the study of Holocene deposits. Non-quantifiable evidence will also be used such as that indicative of soil formation, permafrost degradation, mass movement, and migration of individual plant and animal species. An important aspect of the research will be the study of the fossil wood found at many interglacial sites, in order to establish a "floating" bioclimatic time-series for the last interglacial interval. To date, two workshops have been held to lay the groundwork for the studies, and to develop strategies to secure funding for this multifaceted effort.

Small-type coastal whaling in Japan

Director:
Dr. M.M.R. Freeman, Senior Research Scholar, Boreal Institute and Henry Marshall Tory Professor (Anthropology)
Co-operating Researchers:
Dr. R.R. Andersen, Anthropology, Memorial University of Nfld, St. John's
Dr. T.C. Bestor, Anthropology, Columbia University, New York
Dr. H. Hardaene, Religion, Princeton University, New Jersey
Ms. M. Iwasaki, Anthropology, University of Alberta
Dr. L. Manderson, Medicine, University of Queensland, Brisbane
Mr. C.W. Nicol, Nagano, Japan
Ms. K. Ohmagari, Kanagawa, Japan
Dr. J. Takahashi, International Studies, Obirin University, Tokyo

Research continued on the socio-economic and cultural impact of the international whaling moratorium. Japan completed the phase-out of its commercial whaling operations (in the Antarctic and North Pacific) at the end of 1987, which caused the loss of many hundred jobs in whaling-related occupations. In addition, small-type coastal whaling (which continues, being partly based on whale species not affected by the moratorium) was severely affected last year when the coastal stocks of minke whale were also subject to a zero-catch limit. Research was carried out principally in Taiji, a traditional whaling community (4,400 population) with an 800-year history of whaling. Research was based on interviews with former antarctic and North Pacific whalers (harpooners, captains, flensers, engineers, deckhands, etc.), meat processors, and retailers, Buddhist priests (who conduct whaling and whale-related services), wives and children of whalers, town-hall officials, and health officials. A short visit was paid to another community in Chiba Prefecture, also with a long association with coastal whaling, to interview the local fishery co-operative association chairman, and boarding house owners who have lost revenues from the closing of whale-flensing operations in the community. A report on the research has been completed and submitted to the Institute of Cetacean Research in Tokyo, whose co-operation is gratefully acknowledged.

Toward the Establishment of a Canadian Polar Information System (a co-operative study with the Arctic Institute of North America)

Project Leaders:

Ms. R. Minion, Head Librarian, Boreal Institute, University of Alberta

Mr. R. Goodwin, Arctic Institute of North America, University of Calgary

Co-operating Librarians/Information Specialists:

M.S. Allard, Université du Québec en Abitibi-Temiscamingue, Rouyn-Noranda, UQAT Library

M.G. Drolet, Université Laval, Bibliotheque, Ste. Foy, P.Q.

Mr. H. Finkler, Scientific Affairs Division, Circumpolar and Scientific Affairs Directorate, DIAND

Mrs. R. Kamra, Departmental Librarian, DIAND Library, Ottawa, Ontario

Mme. F. Lange, Université du Québec à Chicoutimi, UQAC Library

Ms. M. Stenbaeck, Centre for Northern Studies and Research, McGill University, Montreal

This co-operative project began as a pilot study, initiated in 1987 between the Boreal Institute for Northern Studies and the Arctic Institute of North America, to determine the feasibility of combining the databases of both Institutes (the two largest Canadian polar databases) to form a larger, more comprehensive information system. In 1989, the CPIS Committee was established with participation from member groups in Quebec and Ontario through support from the federal Department of Indian and Northern Affairs, to examine the possibility of expanding this initial merger of the ASTIS and BOREAL databases to form the core of a Canadian Polar Information System, which would incorporate information and other resources contained at other information centres nationally. The committee is also examining the potential advantages and problems in creating a fully bilingual national system. Currently, the emphasis of the project is on perfecting a design for a Canadian Polar Information System, including such factors as subject and geographic access methods, structure and management of advisory committees, potential needs and users of the CPIS, and technical design considerations, including record formats, network structure,

software, hardware, and procedures. Funding was secured for the study of subject/geographic access and a report submitted to the Department of Indian Affairs and Northern Development, which provided financial support. The second study, examining the potential management structure and advisory committee structure, has been awarded funding, again from the Department of Indian Affairs and Northern Development, and work will commence in 1990.

Hokkaido-Alberta Study on Winter Urban Pedestrian Mobility Problems

Project Leaders:
Dr. M.M.R. Freeman, Senior Research Scholar, Boreal Institute and Henry Marshall Tory Professor (Anthropology)
Dr. S. Hasebe, Managing Director, Northern Regions Centre, Hokkaido University, Japan
Co-operating Researchers/Industry Contacts:
Mr. F. Hara, Researcher, Hokkaido Development Engineering Centre, Inc., Hokkaido, Japan
Dr. W.A. Harrell, Sociology, University of Alberta
Mr. A. Hiasa, Chief Engineer, Hokkaido Engineering Consultants Co. Ltd., Hokkaido, Japan
Mr. K. Kawagushi, Technical Assistant, City Planning Division, Housing and Urban Development, Hokkaido Government, Japan
Mr. T. Kurihashi, Research Division, Northern Regions Centre, Hokkaido University, Japan
Dr. T.M. Nelson, Psychology, University of Alberta
Dr. P.J. Smith, Geography, University of Alberta
Mr. G. Steber, Architect and Planning Consultant, Calgary, Alberta
Mr. E. Tanaka, Hokkaido Cold Region Architectural Research Institute, Hokkaido Government, Japan
Dr. S. Teply, Civil Engineering, University of Alberta

A multidisciplinary study of the approaches and policy issues related to comfort, safety, and efficiency of winter pedestrians in selected Alberta and Hokkaido cities. Research was conducted and two workshops held to discuss several topics, including: 1) mathematical modelling of urban travel choices for planning purposes; 2) development of procedures for evaluating and improving pedestrian capacity at critical locations; 3) evaluation of the effectiveness of various pedestrian systems; 4) evaluation of the impact of sidewalk slipperiness on pedestrian behaviour; 5) perception of winter comfort and outdoor recreational activities correlated with objective physical conditions; 6) investigation into the policy and planning issues relating to comfort, safety, and efficiency of pedestrians; 7) research on other aspects of pedestrian behaviour and design of pedestrian-related personal comfort and safety, and greater efficiency/cost effectiveness.

This program is sponsored by the Alberta-Asia Exchange Programme Fund of the Universities' Coordinating Council.

Belcher Island Reindeer Study

Co-ordinators:
Dr. M.M.R. Freeman, Senior Research Scholar, Boreal Institute and Henry Marshall Tory Professor (Anthropology)
Mr. L. Arragutainaq, Weasel's Hunters and Trappers Association, Sanikiluaq, N.W.T.

Co-operators:
Dr. G.H.R. Henry, Geography, University of Alberta
Dr. R.J. Hudson, Animal Science, University of Alberta
Dr. P. Poole, Consultant, Alcove, Quebec, P.Q.
Ms. M.M. Fleming, Anthropology, University of Alberta

A community-based project designed to increase community capacity to manage their renewable resource base, involving the transfer of technical skills to the community to assist in sustainable economic development. The relevance of traditional systems of knowledge to the management of renewable resource stocks is recognized. The community of Sanikiluaq, on the Belcher Islands, N.W.T., initiated the project by approaching researchers at the University of Alberta concerning the problem of reindeer management. It was developed in close consultation with reseachers chosen or approved by the community. Training and information transfer is an inseparable part of the research undertaking, leading to individuals within the community being able to continue the program and to undertake future management of this resource. If adaptive management has merit, and is perceived as useful in the North, then transmission of this knowledge to others who may benefit is best effected by those closest to the reality, namely the Inuit themselves.

Climate Change and Northern Ecosystems

Project Leaders:
Dr. P.J. Murphy, Associate Dean (Forestry), Agriculture/Forestry, University of Alberta
Dr. R.W. Wein, Director, Boreal Institute, University of Alberta
Co-operating Researchers:
Dr. J. Hoddinott, Botany, University of Alberta
Dr. K.O. Higgenbotham, Forest Science, University of Alberta
Dr. V.J. Lieffers, Forest Science, University of Alberta
Dr. P.A. Thomas, Biology, Keele University, Keele, Great Britain

Climate change is one of the major long-term environmental factors influencing forestry. Predictions for the next 30 to 50 years suggest widespread changes in the ecosystems of the circumpolar North. Northeastern Canada will be strongly affected, but the magnitude of change predicted for Northwest Canada is extreme. This area will become drier and warmer, shifting forest zones northward. It is expected that water table and moisture reduction in peatlands and organic soils will result in heavy degradation of these sites, either by accelerated decomposition or fire. It is anticipated that climate change will occur over a shorter time frame than forest rotation time implying that the relic forest will be replaced by new species successfully establishing under the modified site conditions. Added to the increased frequency and duration of water stress and higher temperatures will be increased loads of UV-B radiation caused by the depletion of the ozone layer over polar regions.

Four subject areas will be investigated: the effects of moisture stress on growth; the growth of representative species with the added stress of high UV-B radiation levels; a test of the hypothesis that temperature, water table, and peatland type will influence decomposition; and a determination of moisture of extinction, rate of burning, and temperature regimes associated with the combustion of peat surface fuels and peats, and of nutrient regimes on deep-burning fires and test hypotheses related to deep ash layers and key species establishment success.

Researcher Profiles

M.I. Asch, Ph.D. (Anthropology) 1972 — Columbia
Adjunct Professor, Anthropology/School of Native Studies

Research Interests: Research revolves primarily around the issue of the articulation of Aboriginal peoples and the modern state. Particular foci are economic development issues and political rights. Of late, more of the work has focussed on the relationship of traditional legal practices to revealed law. Survey of Canadian research on Native People, aboriginal rights and the Canadian constitution. Economy, social organization, and drum dance music of Dene and Slavey communities. Native fur trade industry. Mapping project on Dene land use and occupancy; overlap between Dene/Metis and Inuit land use, especially in the context of aboriginal rights and constitutional reform. The relevance of consociation to the western N.W.T. and the reconciliation of Aboriginal political rights with the ideology of Canadian democracy.

Current Project Titles: Revisions to *Home and Native Land*, for new edition; Family law and the Dene (with Richard Spaulding); Land tenure and political rights among aboriginal peoples; Hunting and economic development in the North.

Funding: SSHRCC; Dene/Metis Negotiations Secretariat; University of Alberta, Central Research Fund; Law Reform Commission of the Northwest Territories.

J. Bednarski, Ph.D. (Geography) 1984 — Alberta
Researcher, Geography/Glaciology

Research Interests: Current research project in Nansen Sound is concerned with high Arctic environmental change reflected by past glaciations. In coastal areas, crustal loading inflicted by past glaciations caused the relative ocean levels to rise. With retreat of the glaciers, the earth's crust began to rebound so that relative sea levels dropped to the present level. By studying the history of relative sea level change, it is possible to infer the past glacial history. Research includes the study of both glacial and marine sediments and landforms. A new project was also initiated for Parks Canada on Canada's northernmost park which involves mapping the surficial geology and geomorphology of the new "Ellesmere Island National Park Reserve." Although most of the mapping will be done from aerial photographs, some ground truthing will be done in the summer of 1990. The map will also be accompanied by a Resource Description and Analysis, which will be incorporated into park management guidelines.

Current Project Titles: The quarternary paleogeography of Nansen Sound, north-central Queen Elizabeth Islands.

Funding: NSERC; Polar Continental Shelf Project; Boreal Alberta Research Grant

---

E.E. Bielawski, Ph.D. (Archaeology) 1981 — Calgary
Researcher, Killam Scholar, Archaeology/Anthropology

Research Interests: Cross-cultural perception of knowledge and science; anthropology and the philosophy of science. Present interests include the Inuit system of knowledge and its comparison to western science;

arctic anthropology; contemporary circumpolar peoples; history, theory, method, and philosophy of science, and science in the North.

Current Project Titles: Cross-cultural epistemology: comparing western science and Inuit systems of knowledge.

Funding: Killam Post-doctoral Fellowship (Research and Salary); Boreal Alberta Research Grant

---

S.A. Boutin, Ph.D. (Zoology) 1983 — Alberta
Adjunct Assistant Professor, Zoology/Behavioural Ecology

Research Interests: Red squirrels are used as a study organism to test hypotheses concerning territory size and acquisition, timing of reproduction, parent-offspring conflict, the effect of territory quality on fitness, and factors affecting overall population size. Focus is on community dynamics of the boreal forest of southwestern Yukon. Large-scale manipulations (fertilization, predator exclusion, supplemental feeding) used to test hypotheses on boreal forest community structure.

Current Project Titles: Behavioural ecology of red squirrels; Community dynamics of the boreal forest.

Funding: NSERC Operating Grant, NSERC Northern Supplement; NSERC Collaborative Special Project; Employment and Immigration (Section 3B); Employment and Immigration (Challenge 89 — AINA administered); Job Creation (Alberta); Job Development (Alberta); Job Creation (Yukon); Job Development (Yukon)

L.N. Carbyn, Ph.D. (Zoology) 1975 — Toronto
Adjunct Researcher, Canadian Wildlife Service, Zoology/Ecology/Environmental Studies

Research Interests: Research is focussed on the ecology of canids, specifically: wolves, coyotes, and swift fox. A major, multi-agency project emphasizing winter ecology and survival is underway to reintroduce swift fox into northern ranges. Other studies involve wolf predation on ungulates in boreal forest areas within Riding Mountain National Park (Manitoba) and Wood Buffalo National Park, N.W.T. General interest is focussed on conservation of ecosystems, with parti-ular attention to carnivores in regional, national, and global perspectives.

Current Project Titles: Wolf-coyote studies in Riding Mountain National Park; Swift fox winter ecology; Wolf predation on bison in Wood Buffalo National Park.

Funding: Canadian Wildlife Service, World Wildlife Fund; Boreal Alberta Research Grant; Advanced Education Endowment Matching Grant.

G. Dacks, Ph.D. (Political Science) 1975 — Princeton
Adjunct Professor, Political Science

Research Interests: Research focus is devolution of authority from the government of Canada to the territorial governments. Study of devolution of authority over energy is underway, as is co-ordination of studies on forestry, health care, wildlife, and implementation issues. These case studies will form the basis for thematic treatments addressing issues of links between devolution and other contemporary constitutional processes in the North. Research on devolution in the context of the thrust for regional government and division; historical antecedents of present devolution processes and the impact of devolution on the life of smaller communities. The overall objective is to describe and explain the process of devolution and to use it as a van-

tage point for observing the larger process of northern constitutional development.

Current Project Titles: Devolution of authority from the government of Canada to the governments of the Yukon and the Northwest Territories; Possible future form of government for the western NWT; Division of the Northwest Territories.

Funding: Donner Canadian Foundation; SSHRCC Operating Grant

J. England, Ph.D. (Geography) 1974 — Colorado
Adjunct Professor, Geography/Glaciology

Research Interests: History of late Quaternary glaciations and sea level fluctuations on Baffin Island, northern Ellesmere Island, and northwest Greenland. Paleoenvironmental change in northernmost Canada (particularly the nature of high latitude glaciation); size and dynamics of ice sheets and the degree of their contribution to the evolution of the Arctic landscape. Other interdisciplinary themes include past changes in vegetation, sea ice fluctuations, fiord sedimentation, and synoptic climatology.

Current Project Titles: Paleoenvironmental change in Canadian high arctic; Glacial history and sea level fluctuations in Arctic Canada; Tertiary and quaternary landscape evolution in Arctic Canada; Reconciling tourism and conservation in sensitive high latitude environments.

Funding: NSERC; Polar Continental Shelf Project; EMR Research Grant

---

M.M.R. Freeman, Ph.D. (Ecology) 1965 — McGill
Senior Research Scholar; HMT Professor, Anthropology/Ecology

Research Interests: Two major projects underway: 1) Belcher Island reindeer community-based project to increase community capacity to manage the renewable resource base, involving transfer of technical skills to the community to assist in the economic development process; 2) Marine mammal management issues in the Canadian North, Alaska, and Japan with emphasis on local initiatives and the international regulatory bodies involved. The reconciliation of local and international objectives with present concerns about sustainable development provide the major focus for the study.

Current Project Titles: Winter urban pedestrian mobility problems (co-ordinator of Hokkaido-Alberta joint research project); Adaptive management and traditional knowledge; Belcher Island reindeer project; Tradition, community, and common-property resource management.

Funding: SSHRCC Research Grant; Universities' Co-ordinating Council (Alberta-Asia International Exchange Program); Institute of Cetacean Research, Japan

---

W.A. Fuller, Ph.D. (Zoology) 1957 — Wisconsin, Professor Emeritus
Senior Research Scholar; Zoology/Ecological Management

Research Interests: Biological studies on a variety of fur-bearing mammals and major study on the biology and management of bison in Wood Buffalo National Park. Currently focussing on networking and external relations program of the Institute, establishing contacts with various international people, organizations, and agencies; especially networking activities in the Soviet North.

Current Project Titles: Samuel Hearne's Lake Thelewy-aza-yeth

Funding: N/A

S. Greer, M.A. (Anthropology) 1976 — Toronto
Visiting Researcher, Archaeology/Anthropology

Research Interests: Subarctic archaeology, investigating Yukon precontact and postcontact Native sites; traditional subsistence and settlement; oral history research; inventory and assessment of heritage resources. Land-use patterns in the Southern Lakes District of the Yukon Territory during the period AD 700–1800; northern site clusters, Native heritage sites.

Current Project Titles: Late precontact land use patterns in the Southern Lakes District, Yukon Territory (Ph.D. research); Traditional land use, Dempster Highway Corridor, northern Yukon Territory (contract research); Historic sites research, Teslin, Yukon (contract research)

Funding: Resource Planning Unit, Teslin Tlingit Council and Heritage Branch, Yukon Government; Boreal Institute for Northern Studies

---

S.J. Hannon, Ph.D. (Zoology) 1982 — British Columbia
Adjunct Associate Professor, Zoology/Behavioural Ecology

Research Interests: Willow ptarmigan. Studies of the 10-year population cycle in ptarmigan and the impacts of spacing behaviour, predation, and overwinter survival on breeding density. Study of the factors maintaining monogamy in ptarmigan, female aggression, hormonal profiles during the breeding season and brood defense behaviour. Chickadees. Study of the influence of winter food supply on population density, impact of defoliation by tent caterpillars on breeding success, parental investment, dominance, and spacing behaviour.

Current Project Titles: Population dynamics and behaviour of willow ptarmigan in southern Yukon; mating systems in northern birds; population ecology of black-capped chickadees in northern Alberta.

Funding: NSERC

G.H.R. Henry, Ph.D. (Botany) 1987 — Toronto
Adjunct Assistant Professor, Geography/Plant Ecology/Botany

Research Interests: Ecological approaches emphasizing studies of plant community ecology and composition. Study of competition in high arctic sedge meadows, competitive hierarchy of 3 sedge species, and response of sedge meadow communities to climatic and grazing gradients on central Ellesmere Island. Autecological studies of *Saxifraga oppositifolia:* along soil moisture gradients and in factorial field experiments of fertilization, greenhouses, and watering. Muskox and caribou range studies are conducted on Banks Island to determine the effects of grazing by muskox in the Thomsen River Valley, and testing of current theories of community organization on between- and within-community variation of high arctic plant communities. Continuing studies of vegetation of polar deserts, and of vegetation recovery relative to plant succession patterns after disturbance.

Current Project Titles: Influence of grazing and climate on competition in high Arctic sedge meadows; Gradient analysis of high arctic sedge meadows; Experimental autecological studies of a ubiquitous Arctic/alpine plant: *Saxifraga oppositifolia;* Muskox and caribou range studies on Banks Island, N.W.T.; Succession on marginal arctic environments.

Funding: NSERC Operating Grant; Polar Continental Shelf Project; Energy, Mines and Resources Canada

C.G. Hickey, Ph.D. (Anthropology) 1975 — Brown
Adjunct Professor (on leave), Anthropology

Research Interests: Two primary research foci: 1) Historical contacts between northern peoples and more complex southern societies. These include early and often long-standing relationships between northern Eurasians (in Scandinavia, northern European Russia, Siberia, north Pacific islands) and more southern Europeans, Central Asians, Chinese, and Japanese. There are also the more recent and often more dramatic contacts between Inuit (and other Eskimoan-speakers) and European-derived societies in far northern North America. 2) The development of adaptational strategies by Arctic peoples over the last 4-5000 years. The orientation here is economic — that is, it is concerned with rational decision-making, including the integration of technology, environmental knowledge, and ideology, rather than with more mechanistic and/or stochastic evolutionary paradigms.

Current Project Titles: The distinctive character of Copper Inuit society and the possible role of the Royal Navy and the search for a Northwest Passage in fostering these transformations; An economic study of the prehistoric Thule Culture of Alaska, Canada, and Greenland.

Funding: SSHRCC; Polar Continental Shelf Project; Boreal Alberta Research Grant

---

E.H. Hogg, Ph.D. (Biology) 1987 — New Brunswick
Researcher, Forest Science/Ecology/Botany

Research Interests: Research focusses on the dynamics of organic matter production and decomposition in northern wetlands, including marshes and peatlands. Study of mechanisms controlling growth and productivity of wetland plants after disturbances such as fire. Global and ecological effects of methane and carbon dioxide emissions from decomposing organic material. Other research interests include the effects of nesting gulls on vegetation and island biogeography of native and non-native vascular plants.

Current Project Titles: Effects of drainage and simulated deep burning on greenhouse gas emissions from forested peatlands in north-central Alberta; The role of storage carbohydrates during the recovery of Bluejoint Grass following disturbance; Effects of vegetation and grass litter buildup on soil thermal regimes after logging.

Funding: NSERC Post-Doctoral Fellowship; Boreal Alberta Research Grant

---

R.J. Hudson, Ph.D. (Animal Science) 1971 — British Columbia
Adjunct Professor, Animal Science/Range Management

Research Interests: Research focusses on studies of the relevance of traditional systems of knowledge to management of renewable resource stocks, such as wildlife, fisheries, and habitat management by northern Indian groups. This involves a study of how viable these traditional systems remain now that northern human populations have undergone rapid and profound demographic, cultural, and technological change. There are ever increasing initiatives which reflect the acceptance of an indigenous capacity to assume a greater role in northern renewable resource management.

Current Project Titles: Belcher Island Reindeer Study.

Funding: Weasel Hunters and Trappers Association of Sanikiluaq; SSHRCC

D. Kuiken, Ph.D. (Psychology) 1970 — Texas
Adjunct Professor , Psychology/Dreaming

Research Interests: Psychological and cross-cultural studies of dreaming, focussing on attributes of dreams that mediate their influence on waking activities, including cross-cultural variations in the attributes. Research has revealed cross-cultural variation in reactions to stressful life events (e.g., divorce, death of a spouse, loss of a job). Having acknowledged that people of different cultural backgrounds perceive stressful life events in dissimilar ways, and that the symptoms of stress differ across cultures, researchers are reluctant to acknowledge that the means for coping with stress also vary from culture to culture. Particular forms of dreaming and dream use among Native people may be culture-specific attempts to cope with stress.

Current Project Titles: Emotional distress and the influence of dreams on waking activities; Dream use among Native Canadians and Euro-Canadians.

Funding: SSHRCC Operating Grant; Boreal Special Initiatives Grant; Boreal Alberta Research Grant

---

L. Lange, Ph.D. (Philosophy) 1980 — Toronto
Research Scholar; C.R.S.A. (until Aug. 1989), Political Science/ Women's Studies/Philosophy

Research Interests: Current research is focussed upon the particular situation of Dene women and men in the North, to contribute to theoretical understanding of the situation and status of women generally. Building on field consultations with Native organizations, concerning research and women's issues, the current objective is to draw the methodological, ethical, and political parallels between research on women and research on Native peoples. Continuation of documentation of the Dene perspective on events since the 1940s.

Current Research Projects: Culture, gender, and social change; Native research concerns and interests; Documentation of the Dene perspective on events since the 1940s.

Funding: Canada Research Fellowship (joint appointment with the Boreal Institute and the Department of Philosophy); SSHRCC; Alberta Killam Endowment Fund

---

W.C. Mackay, Ph.D. (Zoology) 1971 — Case Western
Adjunct Professor, Zoology

Research Interests: Research focuses on economically important fish species in arctic and subarctic lakes: distribution, growth, production, management. These factors are correlated with features of freshwater lakes (surface area, depth, water temperature).

Current Project Titles: Growth and seasonal energetics of fish from northern lakes.

Funding: NSERC; Central Research Fund, University of Alberta

P.A. McCormack, Ph.D. (Anthropology) 1984 — Alberta
Adjunct Researcher, Anthropology/Canadian Studies

Research Interests: Research focusses on the Aboriginal peoples of northern Alberta, especially Chipewyan, Cree, and Metis. Their material cultures and lifestyles, both past and present, are studied along with the European origins of some components. These investigations are framed by considerations of these regions and their inhabitants as

incorporated into developing world systems, mediated by a European-based fur trade and Canadian state structures.

Current Project Titles: Historic Native material culture and its European roots; Northern Chipewyans, Crees, and Metis: cultural transformations and modern societies; Fort Chipewyan, long-term research; Chipewyan-Cree ethnicity; Fort Chipewyan travelling exhibit; Ethnology Gallery redevelopment.

Funding: Provincial Museum of Alberta; Boreal Alberta Research Grant

---

R. Minion, M.L.S. (Library Science) 1981 — Alberta, Researcher
Head Librarian, Library Database Development and Management

Research Interests: Research focusses on the study of northern library bibliographic databases to determine which systems yield the best support mechanisms for librarians and researchers, and the implication of such systems for the future of northern-oriented databases. The primary question is whether northern-oriented databases are serving a useful function or if they should be abandoned in favour of subject-oriented databases.

Current Project Titles: Study of database overlap between geographically oriented and subject-oriented databases; Toward the establishment of a Canadian Polar Information System; BOREAL/DOBIS overlap study

Funding: Central Research Fund, University of Alberta; DIAND Research Contracts

---

T.P. Murphy, Ph.D. (Zoology), 1987 — British Columbia
Co-operative Researcher National Waters Research Institute,, Phycology/Limnology/Botany/Zoology

Research Interests: As an employee of the National Waters Research Institute (NWRI), studies of lakes and dugouts of Alberta and British Columbia. Study of the reactions regulating eutrophication, implementing several experimental lake treatments. This work has a national significance in that the responses of whole lake tests of western lakes are being used in remedial action plans for sites in the Great Lakes. Studies continue into the dredging experiment at Chain Lake, B.C.; lime treatment of Alberta lakes and dugouts to reduce eutrophication; assessment of the lime and oxygen treatments on organic contaminants in Alberta dugouts; and an assessment of the effects of oxygen treatment of Amisk Lake.

Current Project Titles: Lake restoration technology; Assessment of lime and oxygen treatments on organic contaminants

Funding: NSERC; Donner Canadian Foundation; Alberta Agriculture; Environment Canada

---

J. Pathy, Ph.D. (Social Systems), 1977 — New Delhi
Visiting Researcher, Anthropology/Sociology

Research Interests: Research focusses on agrarian structure in tribal Gujaraj and its implications for tribal policies, ethnic minorities and the processes of their development, and landholding systems in tribal areas. Interests include tribal question, Marxist anthropology, and Indian sociology/social anthropology. Comparative study of land and cultural rights (including self-determination) of Indian tribals and Canadian Native peoples. His hypothesis is that despite the broad similarities between the two in terms of their existence and

relationship with the State, the major source of difference is the recognition of group rights in Canada versus the non-recognition of such rights in India. The history of agreements, ecology, demography, welfare systems, political organizations and influence of concerned international bodies contribute to the existing differences.

Current Project Titles: Comparative study of land and cultural rights (including self-determination) of Indian tribals and Canadian Native peoples.

Funding: Shastri Indo-Canadian Institute; Boreal Institute for Northern Studies; Jawaharla Nehru University

---

E.E. Prepas, Ph.D. (Zoology) 1980 — Toronto
Adjunct Associate Professor, Zoology/Limnology/Ecology/Statistics/ Environmental Studies

Research Interests: Multidisciplinary and co-operative studies focus on lake restoration: i) development of technology to inject liquid oxygen into seasonally ice-covered lakes and evaluating the impact of this technology on aquatic communities in a medium-sized lake; ii) development of a program on lime treatment of eutrophie in hardwater lakes, which includes understanding changes to chemical and biological processes with lime additions. Rural drinking water supplies: an evaluation of the impact of high dosages of lime on various drinking water problems in over two dozen drinking water dugouts in Alberta; and an evaluation of the impact of a common herbicide (Treflan), on rural drinking water supplies. Macrophytes in rivers: continuation of experimental program on how nutrients in flowing waters reach macrophytes and the impact of flow rates in macrophyte beds in slow flowing rivers.

Current Project Titles: Lake resoration: i) Impact of liquid oxygen injections on aquatic communities; ii) Evaluation of the potential for lime to improve water quality in eutrophic recreational lakes; Rural drinking water supplies: Development of new approaches to improve drinking water supplies in rural areas; Macrophytes in rivers: Determination of factors controlling rooted plant growth in flowing rivers.

Funding: NSERC Operating Grant; NSERC Infrastructure Grant (co-investigator); Donner Canadian Foundation (co-investigator); Alberta Agriculture (co-investigator); Environment Canada; Farming for the Future

---

J. Roland, Ph.D. (Botany) 1986 — British Columbia
Researcher , Zoology/Botany/Entomology/Population Ecology

Research Interests: Population dynamics of winter moth: analysis of factors causing population change in an introduced defoliator of deciduous trees. Includes a study of the impact of the introduced parasitic fly, *Cyzenis albicans.* Chemical ecology of parasitoid search: examines the plant chemical cues used by the introduced parasitic fly *Cyzenis albicans* to locate its host. Experimental manipulation of attack rate on winter moth has been achieved by the use of these plant chemical extracts. Study of the effect of habitat structure on rate of decline of tent caterpillar populations examines the rates of spread of mortality factors of tent caterpillars, such as parasites and pathogens as they are affected by forest structure.

Current Project Titles: Biological control of forest and agriculture pests; Population dynamics of forest insects; Chemical ecology of insect host-parasite interaction.
Funding: NSERC Post-Doctoral Fellowship

N.W. Rutter, Ph.D. (Geology) 1966 — Alberta
Adjunct Professor, Geology

Research Interests: Quaternary stratigraphy and process sedimentology of the Canadian Rocky Mountains, paleosol investigations of glaciated and unglaciated surfaces; terrain analysis and land classification; amino acid dating methods; geoarchaeology, pan sedimentation, Southwest Africa; Quaternary shoreline studies, Argentina; Loess stratigraphy, China.

Current Project Titles: Geochronological control of the last interglaciation; Climate and environment of the last interglaciation in the arctic and subarctic of North America (Project CELIA); Quaternary history of western Canada; Paleoclimates of north-central China; Quaternary shorelines of Argentina

Funding: NSERC, National Geographic Society, Chinese Academy of Science

---

A. Schwarz, Ph.D. (Plant Ecology) 1988—Saskatchewan
Researcher, Forest Science/Plant Ecology

Research Interests: In the past year research has been carried out on three sub-projects dealing with the distribution and floristic composition of dry grasslands in the boreal forest region of northern Alberta. Dry grasslands in the boreal forest of western Canada are of interest since simulations using Global Circulation Models predict a change to a warmer and drier climate as atmospheric carbon dioxide steadily increases over the next few decades. Grasslands may expand at the expense of aspen forests — an obvious concern to the forest industry. Three sub-projects represent the descriptive phase of the research.

Current Project Titles: Grassland remnants on valley slopes of northern Alberta; Grassland remnants of Wood Buffalo National Park; Pre-agricultural distribution of remnant grasslands in northern Alberta.

Funding: NSERC Forestry Post-Doctoral Fellowship; Boreal Alberta Research Grant

---

B. Schweger, M.Sc. (Clothing and Textiles) 1983—Alberta
Researcher, Clothing and Textiles

Research Interests: Research focuses on the material history of the circumpolar North, with a particular emphasis on the clothing and textile equipment utilized, relative to social/cultural factors, changing technology, and aspects of the environment. Current research involves use of both historical published and archival source materials and standard laboratory procedures for the analysis of textiles or organic artifacts located in the context of archaeological sites in arctic Canada and arctic Scandinavia.

Current Project Titles: The clothing and textiles associated with the 1846 burials of John Torrington, William Hartnell, and William Braine on Beechey Island, N.W.T.; A survey of the clothing and textile equipment utilized in the European Arctic by Scandinavian explorers between 1700 and 1850 A.D.; The Farvolden Collection: Clothing and household textiles brought to Alberta, Canada, by a Norwegian

immigrant family, with reference to similar pieces housed in the Norwegian Folk Museums and the Norwegian-American Museum.

Funding: Swedish Institute Research Scholarship; Central Research Fund, University of Alberta; Boreal Alberta Research Grant; SSHRCC International Collaborative Research Grant; Alberta Museums Association; Canadian-Scandinavian Foundation.

C. Schweger, Ph.D. (Anthropology) 1974—Alberta
Adjunct Prof., Anthropology/Geography/Environmental Archaeology

Research Interests: Currently on sabbatical leave at the University of Tromso, working with palynologists on the completion of Alaskan/Yukon research, and participating in on-going research on Iron Age farms in northern Norway, environmental archaeology in Scandinavia, Norse settlements. Also initiating the CELIA project through the Boreal Institute (see description on page 17), which is in the planning stages of research.

Current Project Titles: Climate and environment of the last interglaciation (Isotope Stage 5e) in Arctic and Subarctic North America (CELIA).

Funding: Boreal Special Initiatives Grant; NSERC.

D. Stenton, Ph.D. (Anthropology), 1989—Alberta
Visiting Researcher; SSHRCC Post-Doctoral Fellow, Anthropology

Research Interests: Research interest focusses on the role of terrestrial wildlife resources in Thule culture settlement and subsistence systems, and working with Inuit Elders on Southern Baffin Island to reconstruct traditional inland hunting systems, applying this information to the prehistoric record. The objective of this research is to understand the effects of environmental changes in the terrestrial environment on prehistoric land use patterns. Developed and taught an introductory course in Anthropology and Archaeology at the Nunatta Campus of Arctic College in Iqaluit, Baffin Island, which is offered again in 1990. Also initiating community-based archaeological research project in co-operation with Arctic College.

Current Project Titles: Traditional inland hunting systems on Southern Baffin Island; Archaeological investigations in Peterhead Inlet, Frobisher Bay, N.W.T.

Funding: SSHRCC; Boreal Alberta Research Grant; Central Research Fund, University of Alberta

---

T. Sweda, Ph.D., (Forestry) —Nagoya University
Visiting Researcher, Forest Science/Botany

Research Interests: Research focusses on the use of mathematical models to simulate and predict forest stand dynamics. Study of the effects of possible climate change on boreal vegetation through dendrochronological analyses to find the relationship between the fluctuations in climate and tree-growth of the past 100 years. Working to develop computer program to generate maps of the boreal regions of the world in accordance with different climate change scenarios.

Current Project Titles: Climate changes and fire history for past 100 years in Wood Buffalo National Park.

Funding: NSERC International Collaborative Research Exchange Program Scholarship

---

W. Vanast, M.D. (Medicine) 1966, FRCP (Neurology) 1976—Toronto
Researcher, Medicine/Neurology

Research Interests: Study of Native and frontier medicine relevant to current northern medical needs. Research into the historical and anthropological aspects of northern health in Canada, and traditional medicine/healing practices.

Current Project Titles: History of northern medicine; Traditional medicine and medical history; Northern medical activities.

Funding: Hannah Foundation; Avataq Cultural Institute; Oblate Fathers; Boreal Alberta Research Grant

---

L.A. Wakelyn, M.Sc. (Wildlife Biology) 1984—Colorado State
Visiting Researcher, Wildlife Biology/Zoology

Research Interests: Contract research work for the Northwest Territories Wildlife Management Branch, namely, the "Wetland Project" continued, which included: a) assessing the accuracy of preliminary Landsat-derived land cover maps for 2 wetland areas; b) revising the Landsat classification, if necessary; and c) completing the final project report. Another study was initiated, which involved the collection of data for habitat availability for peregrine falcons using forest cover type maps. The data were compiled and organized for comparison with previously collected data describing the cover type composition of known nesting and breeding habitats of peregrines in 4 study areas in the Mackenzie River Valley. This data was used to determine habitat use in relation to availability.

Current Project Titles: Wetland project; Raptor Habitat Project

Funding: Wildlife Management Division, N.W.T. Renewable Resources; Boreal Alberta Research Grant

---

D. Wall, Ph.D. (Education) 1987—Alberta
Visiting Researcher, Intercultural/Native Education

Research Interests: Research into intercultural interaction aimed at teaching and social service professions. Native education policy research involving analysis of Alberta government policy and program initiatives as these relate to fourth world peoples. Development of more precise descriptive representations for social scientists appealing to the internal colonial model in studies of fourth world peoples. Continuing interest in Northlands School Division and relationship to Alberta Education and development of systematic multicultural policy in Alberta.

Current Project Titles: The Handbook on Intercultural Interaction for students of Canadian Aboriginal Education in the 1990s; The Alberta Native Education Policy: a social science analysis; Reducing uncertainty, the internal colonial model: polemic or useful social science concept in a fourth world school control situation.

Funding: Alberta Advisory Committee for Educational Studies (with C. Urion); Alberta Department of Culture and Multiculturalism

---

E.E. Wein, Ph.D. (Applied Human Nutrition) 1989—Guelph
Researcher, Foods and Nutrition

Research Interests: Research focusses on nutrient intakes and food consumption patterns of northern Native Canadians, with emphasis on the role of country foods in Native diets. Food beliefs and preferences are also examined, among Native Canadians of various ages, in

northern Alberta and in the Wood Buffalo National Park area, to contribute toward an understanding of factors affecting food choices.

Current Project Titles: Nutrient intakes and food beliefs of Native Canadian school children and mothers in northern Alberta.

Funding: National Health Research and Development Program — Postdoctoral Fellowship; Boreal Alberta Research Grant

---

R.W. Wein, Ph.D. (Ecology) 1969—Utah State
Director and Researcher, Ecology/Fire Ecology

Research Interests: Research is oriented toward the study of the ecological effects of fire in the boreal forest and the forest-tundra border under climate change scenarios. Ecological emphasis on nutrient cycling on permafrost soils and post-fire succession patterns. A major interdisciplinary study is underway in Wood Buffalo National Park in cooperation with the University of New Brunswick.

Current Project Titles: The role of natural fires in ecosystem dynamics; Fire ecology studies in Wood Buffalo National Park; Fire management studies; The impact of climatic change on ecosystem dynamics.

Funding: NSERC Operating Grant; Donner Canadian Foundation Grant; Canadian Wildlife Service, Environment Canada

---

E.A. Young, Ph.D. (Human Geography), 1977—Australian National
Visiting Researcher, Human Geography/Anthropology

Research Interests: Research into issues affecting contemporary development in rural Aboriginal communities in northern Australia. These have included socio-economic components, such as population structure and mobility; employment and incomes (both monetary and non-monetary); service provision (education, telecommunications); and Aboriginal-owned enterprises (retail stores, pastoral companies, and others). Research also includes work on Aboriginal land tenure and its relationship to development. While in Canada, conducted research on Indian and Inuit involvement in community commercial enterprises in the Northwest Territories.

Current Project Titles: The study of Aboriginal population mobility in Central Australia; Aboriginal involvement in pastoral enterprises in the East Kimberley; The development of Aboriginal economic enterprises in rural northern Territory communities.

Funding: Department of Aboriginal Affairs; Commonwealth Tertiary Education Committee; Myer Foundation; University of New South Wales; Northern Territory Department of Community Development.

Research Grants Programs and Scholarships

Research Grants Adjudication Committees

BAR Grants Adjudication Commitee
T.S. Veeman (Rural Economy) — Chair
M.M.R. Freeman (Anthropology and Boreal Institute)
S.J. Hannon (Zoology),
G.H.R. Henry (Geography)

DIAND–NSTG Grant Adjudication Commitee
T.S. Veeman (Rural Economy) — Chair
M.M.R. Freeman (Anthropology and Boreal Institute)
S.J. Hannon (Zoology)
B. Jones (Paleontological Collections and Geology)

Research Grants Administrator: Ms. A. Moore

Approximately 95 academic staff members from the University of Alberta and externally are involved in reviewing the BAR and DIAND–NSTG Grant proposals each year.

The Grants Adjudication Committees operate with guidelines similar to those of NSERC, SSHRCC, and MRC. As a multidisciplinary centre, the Institute's grant programs accept applications for funding on any aspect of the North. The wide variety of research themes contained in this list is indicative of the support and enthusiasm for northern research at the University of Alberta.

Boreal Alberta Research Grants

A total of $109,800 was distributed to 30 individuals.

Beckingham, J.D. Geography ($3,000). Range improvement trials in Alberta's mixed-wood eco-region.

Bednarski, J.M. Boreal Institute ($7,000). The quaternary paleogeography of Nansen Sound, N.W.T.

Bielawski, E.E. Boreal Institute ($8,000). Cross-cultural epistemology: Comparing western science and Inuit systems of knowledge.

Field, K.M. Zoology ($4,000). Hypoclimnetic oxygenation: effects on the zooplankton community of a eutrophic lake.

Fry, K.M. Entomology ($1,500). Development and use of mucopolysaccharides in feeding in larval *Culicomorpha (Diptera: Nematocera).*

Gerard, R. Civil Engineering ($2,000). Field documentation of ice jam profile.

Gilbert, B.S. Kluane, Yukon ($2,500). Terrestrial food webs in S.W. Yukon, described by Native elders.

Halstead, D.A. Geography ($3,000). Quantitative assessment of stream fish assemblage structure using digital terrain information.

Kappes, T.L. Zoology ($4,000). Foraging ecology of yellow perch *(Perca flavescens).*

Kershaw, G.P. Geography ($5,000). Movement of crude-oil within the active layer.

Kritsch, I.D. Anthropology ($2,000). A socio-economic analysis of modern Dene households.

Lee, T.G. Architecture, University of Calgary ($3,000). Appropriate design and construction methods for northern conditions.

Lewis, H.T. Anthropology ($3,000). The traditional ecological knowledge of fire in Tall Cree, Alberta.

Measures, L.N. Zoology ($2,500). Helminth communities of bats in Alberta.

Montagnes, R.J.S. Botany ($4,800). Patterns of variation in *Meesia triquetra* along an Arctic-Boreal gradient.

Nagy, M.I. Anthropology ($3,500). Human occupations in the Ivujivik Peninsula (Nouveau-Quebec): Prehistoric and ecological perspectives.

Orr, R.A. Zoology ($5,000). Passage of north-temperate freshwater fish in a Denil fishway.

Ouellet, J.P. Zoology ($2,500). Significance of summer food supply on the population dynamics of the snowshoe hare.

Priegert, J. Archeological Survey of Alberta; Anthropology ($3,000). Investigation of the prehistoric chronology of the Swan Hills, Alberta.

Rushton, R.W. Geology ($5,000). Fluid inclusions study of mesothermal quartz veins, the Klondike, Yukon.

Sandercock, B.K. Zoology ($2,500). Brood defence strategies in willow ptarmigan.

Schwarz, A.G. Forest Science ($2,000). Changes in competitive interactions of trees and grasses in northwestern Canada as a result of climatic change.

Shewchuk, T.R. Biology, Grande Prairie Regional College ($3,000). Establishment and maintenance of fish zoology, helminth communities in northern lakes.

Stadt, J.J. Botany ($3,000). *Pinus contorta* community dynamics in Banff and Jasper National Parks.

Stevenson, M.G. Anthropology ($7,000). Ethnohistory and ethnoarchaeology of the Cumberland Sound Inuit.

Stoyke, G. Botany ($2,500). Taxonomy and ecology of alpine ericoid mycorrhizae.

Wakelyn, L.A. Yellowknife, N.W.T. ($1,000). Reproductive success of tree swallows in relation to food abundance.

Webb, D.J. Zoology ($5,500). Temporal and spatial patterns of chlorophyll *a* in a boreal lake,

Wein, E.E., Z.J. Hawrysh, and M.I. Gee. Foods and Nutrition ($4,000). Nutrient intakes and food beliefs of Native Canadian school children.

Wheeler, P.C. Anthropology ($5,000). Culture change and commoditization of subsistence resources.

DIAND–Northern Science Training Grants

Awards totalling $64,000 were made to 22 graduate and honours specialization students.

Abbott, S.P. Botany ($1,500). Taxonomy of the genus *Helvella* in northwestern North America.

Biggar, K.W. Civil Engineering ($1,500). Adfreeze pile performance in saline permafrost.

Cotter, R.C. Zoology ($4,000). Reproductive biology and the role of predation in rock ptarmigan.

Desrosiers, J. Botany ($3,400). Autecology of *Saxifraga oppositifolia:* an "invader" species of the polar desert.

Dobush, G.R. Zoology ($4,200). Cost-benefits of alternative mating strategies to male willow ptarmigan.

Hivon, E. Civil Engineering ($1,500). Distribution of saline permafrost in the Yukon.

Hogenbirk, J.C. Botany ($2,000). The response of wetland vegetation to climatic change and fire.

Kemmett, S. Forest Science ($2,500). Revegetation of old oil spills at the forest-tundra boundary.

Kritsch, I. Anthropology ($6,000). A socio-economic analysis of modern Dene households.

Lapointe, S. Botany ($2,000). The effect of climate change on the plant soil environment.

Marshall, B. Geography ($2,500). Preliminary hydrological investigations of a High Arctic lowland.

More, S. Zoology ($2,500). Breeding synchrony and the timing of reproduction in willow ptarmigan.

Murie, K.A. Zoology (2,800). The genetic contribution of unmated males to willow ptarmigan populations.

Murray, D. Zoology ($4,000). Food and habitat selection of lynx and coyotes in southwestern Yukon during an increase in snowshoe hare density.

Nagy, M. Anthropology ($3,500). Human occupation in the Ivujivik Peninsula (Nouveau Quebec): prehistoric and ecological perspectives.

Ouellet, J.P. Zoology ($4,500). Significance of summer food supply on the population dynamics of the snowshoe hare.

Priddle, R. Forest Science ($2,000). The effect of peat (*Sphagnum* spp.) removal on palsa collapse.

St. George, D.R. Agricultural Engineering ($2,100). Horticultural crop production in northern Canada.

Sandercock, B.K. Zoology ($4,000). Brood defense strategies of willow ptarmigan.

Sjare, B.L. Zoology ($4,000). Reproductive ecology of Atlantic walruses, *Odobenus rosmarus rosmarus*, in the central Canadian High Arctic.

Wright, R.A. Zoology ($2,000). Global warming trends and vegetation change in the boreal forest.

Young, R.R. Geography ($1,500). Preliminary hydrological investigations of a High Arctic lowland.

Northern Dene Language Scholarship

Ms. Sarah Cleary of Fort Norman, N.W.T., completed her tenure as the first recipient of the $10,000 scholarship jointly funded by the Vice-President (Research) and the Department of Education, Government of the Northwest Territories. The award supported one year of study at the University of Alberta in an area dealing with the preservation and teaching of Dene languages in the North. In addition to pursuing her studies, Ms. Cleary taught an introductory course in Slavey through the School of Native Studies.

The Kennett Y. Spencer Memorial Scholarship

An award of $500 was granted to Mr. Rogier Gruys of the Department of Zoology, University of Alberta for his thesis research entitled "The winter mortality and movements of willow ptarmigan in southern Yukon."

Publications Program

Publications Committee
Dr. S. A. Boutin, Associate Professor of Zoology — Chair
Mrs. N. Gutteridge, Director, University Press
Dr. G. Dacks, Professor of Political Science
Ms. L. Hargrave, Managing Editor, Publications, Boreal Institute

Institute Publications

In 1989 one volume in the Occasional Publications Series was published. Two more Occasional Publications and the second volume of the Circumpolar Research Series are in press. All publications can be ordered from the Institute. Individual research papers should be requested from the author(s) directly.

Occasional Publication Series

No. 22. *Northern Lakes and Rivers.* William C. Mackay (ed.), 120 pp.

This collection of papers, from presentations during the *Knowing the North* conference in 1986, reveals a multidisciplinary approach and understanding of northern waters through reports on research into such topics as: freeze-up and break-up of ice on Arctic lakes and rivers, snow cover run-off, hydrology of the Mackenzie Delta lakes, infectious viruses in Arctic char populations in the Mackenzie Delta, growth, feeding and reproductive biology of northern freshwater fish, intercontinental comparisons of small boreal lakes, and the ecology of pill clams.

Circumpolar Research Series

None produced in 1989, but 2 manuscripts currently under review for 1990.

Researcher Publications

Refereed Journal Publications

Asch, M.I. 1989. Wildlife: Defining the animals the Dene hunt and the settlement of aboriginal rights claims. Canadian Public Policy XV(2): 205-219.

Babin, J., E.E. Prepas, T.P. Murphy, and H.R. Hamilton. 1989. A test of the effects of lime on algal biomass and total phosphorus concentrations in Edmonton stormwater retention lakes. Lake and Reservoir Management 5(1): 129-135.

Bednarski, J. 1989. The geomorphology of glaciomarine sediments in a high Arctic fiord. Geographie physique et Quaternaire 42: 65-74.

Boutin, S. and D. Cluff. 1989. Coyote prey choice: optimal or opportunistic foraging? A comment. Journal of Wildlife Management 53: 663-667.

Carbyn, L.N. 1989. Cases of coyote attacks on children in western North America. Wildlife Society Bulletin 17 (4): 5 pp.

Carbyn, L.N. and M. Killaby. 1989. Status of swift foxes in Saskatchewan. Blue Jay 47: 41-52.

Chambers, P.A., E.E. Prepas, M.L. Bothwell, and H.R. Hamilton. 1989. Roots versus shoots in nutrient uptake by aquatic macrophytes in flowing waters. Canadian Journal of Fisheries and Aquatic Sciences 46: 4350-439.

Chapman, L.J., W.C. Mackay, and C.W. Wilkinson. 1989. Feeding flexibility in northern pike *(Esox lucius):* fish versus invertebrate

prey. Canadian Journal of Fisheries and Aquatic Sciences 46: 666-669.

Convey, L.E., J.M. Hanson, and W.C. Mackay. 1989. Size-selective predation on unionoid clams by muskrats. Journal of Wildlife Management 53: 654-657.

Das, M.K. and J.S. Nelson. 1988 (released 1989). Hybridization between northern redbelly dace *(Phoxinus eos)* and finescale dace *(Phoxinus neogaeus)* (Osteichthyes: Cyprinidae) in Alberta. Canadian Journal of Zoology 67: 579-584.

Desrochers, A. 1989. Sex, dominance and microhabitat use in wintering black-capped chickadees: A field experiment. Ecology 70(3): 636-645.

Desrochers, A. and S.J. Hannon. 1989. Site-related dominance and spacing among winter flocks of black-capped chickadees. Condor 91: 317-323.

Evans, M.E., K.P. Gillen, and M.A.H. Hedlin. 1989. Further paleomagnetic results from Pleistocene sediments in northern Canada supporting the existence of stationary secular variation sources. Physics of the Earth and Planetary Interiors 56: 105-111.

Hanson, J.M., E.E. Prepas, and W.C. Mackay. 1989. Size distribution of the macroinvertebrate community in a freshwater lake. Canadian Journal of Fisheries and Aquatic Sciences 46: 1510-1519.

Hanson, J.M., W.C. Mackay, and E.E. Prepas. 1989. Effect of size-selective predation by muskrats *(Ondatra zebithicus)* on a population of unionoid clams *(Anodonta grandis simpsoniana)*. Journal of Animal Ecology 58: 15-28.

Hogg, E.H., J.K. Morton, and J.M. Venn. 1989. Biogeography of island floras in the Great Lakes. I. Species richness and composition in relation to gull nesting activities. Canadian Journal of Botany 67: 961-969.

Kerr, N. and B.F. Schweger. 1989. Survival of archaeological textiles in an arctic environment. Biodeterioration Research 2: 19-38, New York: Plenum Press.

Morton, J.K. and E.H. Hogg. 1989. Biogeography of island floras in the Great Lakes. II. Plant dispersal. Canadian Journal of Botany 67: 1803-1820.

O'Reilly, P. and S.J. Hannon. 1989. Predation of simulated willow ptarmigan nests on the influence of density and cover on spatial and temporal patterns of predation. Canadian Journal of Zoology 67: 1263-1267.

Rivard, P.A. and P.M. Woodard. 1989. Light, ash, and pH effects on the germination and seedling growth of *Typha latifolia* (cattail). Canadian Journal of Botany 67: 2783-2787.

Roland, J., J.H. Myers, and W.G. Evans. 1989. Manipulation of oviposition patterns of the parasitoid *Cyzenis albicans* (Tachinidae) in the field using plant extract. Journal of Insect Behaviour 2: 487-502.

Schwarz, A.G. and M.J.T. Reaney. 1989. Perennating structures and freezing tolerance of northern and southern populations of C-4 grasses. Botanical Gazette. 150(3): 239-246.

Shaw, R.D., A.M. Trimbee, A. Minty, H. Fricker, and E.E. Prepas. 1989. Atmospheric deposition of phosphorus and nitrogen in central Alberta with emphasis on Narrow Lake. Water, Air and Soil Pollution 43: 119-134.

Shaw, J.F.H. and E.E. Prepas. 1989. Temporal and spatial patterns of porewater phosphorus in shallow sediments, and potential transport

in Narrow Lake, Alberta. Canadian Journal of Fisheries and Aquatic Sciences 46(6): 981-988.

Tanasichuk, R.W. and W.C. Mackay. 1989. Quantitative and qualitative characteristics of somatic and gonadal growth of yellow perch *(Perca flavescens)* from Lac Ste. Anne, Alberta. Canadian Journal of Fisheries and Aquatic Sciences 46: 666-669.

Therrien, B.K. 1988 (released 1989). Joint management: A look at the early record of the Porcupine Caribou Management Board. The Northern Review, No. 2: 17-32.

Waterman, J.M., A. Desrochers, and S.J. Hannon. 1989. A case of polandry in the black-capped chickadee. Wilson Bulletin 101: 351-353.

Wein, E.E., J.H. Sabry, and F.T. Evers. 1989. Food health beliefs and preferences of Northern Native Canadians. Ecology of Food and Nutrition 23: 177-188.

Wein, E.E. and J.H. Sabry. 1988. Use of country foods by Native Canadians in the taiga. Arctic Medical Research 40; suppl. 1: 134-138 (released September 1989).

Weissling, L.E. 1989. Arctic Canada and Zambia: A comparison of development processes in the fourth and third worlds. Arctic 42(3): 208-216.

Conference Proceedings and Chapters in Books

Carbyn, L.N. 1989. Wolves in Riding Mountain National Park: Ecosystem protection and thoughts on a holistic conservation strategy, pp. 82-96. In: D. Seip (ed), Wolf-prey dynamics and management. Proceedings of a symposium 10-11 May 1988. B.C. Wildlife Report No. 40, 182 pp.

Chambers, P.A., E.E. Prepas, and M.L. Borthwell. 1989. Nutrient dynamics in slow-flowing rivers on the Canadian Prairies. XXIV Congress of the International Association of Limnology. August 1989. International Vereinigung für theoretische und angewandte Limnologie 24.

Freeman, M.M.R. 1989. The Alaska Eskimo Whaling Commission: successful co-management under extreme conditions, pp. 137-153. In: E. Pinkerton (ed), Co-operative Management of Local fisheries: new directions for improved management and community development. Vancouver: University of British Columbia Press.

Freeman, M.M.R. 1989. Graphs and gaffs: a cautionary tale in the common property resource debate, pp. 92-109. In F. Berkes (ed), Common property resources: ecology and community-based sustainable development. London: Belhaven Press.

Hannon, S.J. 1988. Aggression by female willow ptarmigan: defence of mate or resources? International Behavioural Ecology Conference, October, Vancouver, B.C.

Henry, G.H.R. and J. Svoboda. 1989. Comparisons of grazed and non-grazed high arctic sedge meadows, pp. A47. In: P.F. Flood (ed), Proceedings of the Second International Muskox Symposium, Saskatoon, Saskatchewan, Canada, 1-4 October 1987. National Research Council of Canada.

Hogg, E.H. and V.J. Lieffers. 1989. The relationship between carbohydrate status of rhizomes and shoot regrowth following disturbance in *Calamagrostis canadensis*. Presented at the American Institute for Biological Sciences Annual Meeting, Toronto, Ontario, August 6-10, 1989.

Mackay, W.C. 1989. Growth, feeding and reproductive biology of freshwater fish in northern Canada, pp. 93-105. In: W.C. Mackay (ed), Northern Lakes and Rivers. Occasional Publication No. 22. Edmonton: Boreal Institute for Northern Studies.

McCormack, P.A. 1989. Chipewyans turn Cree: governmental and structural factors in ethnic processes. In: K.S. Coates and W.R. Morrison (eds), For Purposes of Dominion: Essays in Honour of Morris Baslow. North York, Ontario: Caphis Press.

McCormack, P.A. 1989. "That's a piece of junk": issues in contemporary subarctic collecting. Out of the North: A symposium on the Native arts and material culture of the Canadian and Alaskan north. Haffenreffer Museum of Anthropology, October 20-21.

McCormack, P.A. 1989. Reviving contemporary collecting: the Fort Chipewyan collection at the Provincial Museum of Alberta. Special session: Collecting the Objects of Others. 88th Annual Meeting of the American Anthropological Association, Washington, D.C., November 15-19.

McCormack, P.A. 1989. Working with the community: a dialectical approach to exhibit development. Canada's Native community and museums: A new dialogue and new initiatives. Seminar, Alberta Museums Association Professional Development Series, Calgary, April 7-9

Prepas, E.E., D.J. Webb, C.L.K. Robinson, and T.P. Murphy. 1989. Impact of liquid oxygen injection on a deep, naturally eutrophic lake: Amisk Lake, Alberta, year one. XXIV Congress of the International Association of Limnology. August 1989. International Vereinigung für theoretische und angewandte Limnologie 24.

Roland, J. 1989. Interaction of parasitism and predation in the decline of winter moth in Canada. Population Dynamics of Forest Insects, September 1989. Edinburgh.

Schweiger, S. and S. Boutin. 1989. The effect of supplemental food on overwinter survival of red-backed voles. 68th Annual Meeting of the American Society of Mammalogists. Fairbanks, Alaska, June 1989.

Szilder, K., G. Henry, E.P. Lozowski, and C. Labine. 1989. A simple numerical model for simulating the climate and energy balance of the arctic tundra in summer, pp. 263-271. In: S. Fukusako and K.C. Cheng (eds), Proceedings of the 1989 International Symposium on Cold Regions Heat Transfer, June 28-30, Hokkaido University, Sapporo, Japan.

Wein, E.E. and J.H. Sabry. 1989. Accuracy of recalled estimates of food portion size among a group of northern Canadian Native and non-Native college students. Proceedings of the Canadian Dietetic Association Conference, June 20, Edmonton.

Abstracts and Reviews

Bielawski, E.E. 1989. Review: The Alaska Almanac. From the Editors of the Milepost, The Alaskan Journal and Alaska Geographic, Anchorage, Alaska, Northwest Publishing Company, 1988, 254 pp. Arctic 42(2): 172.

Boutin, S. 1989. Predator-pit models in North American ungulate management. Abstracts and papers, 5th International Theriological Congress, Rome, Italy, August 22-29.

Carbyn, L.N. 1989. Swift fox reintroductions to the Canadian prairies and a review of possible causes for extirpation, p. 242. Abstract and papers, 5th International Theriological Conference, Rome, Italy, 22-29 August 1989.

Desrosiers, J. and G.H.R. Henry. 1989. Autecology of *Saxifraga oppositifolia:* an invader of the polar desert. Abstract for the 18th Annual Arctic Workshop, University of Lethbridge, Lethbridge, Alberta, 13-15 April, 1989.

Henry, G.H.R. and F. Reintjes. 1989. Compensatory growth response of high arctic sedges to simulated grazing: effects of clipping frequency and provenance. Abstract for the 18th Annual Arctic Workshop, University of Lethbridge, Lethbridge, Alberta, 13-15 April 1989.

Henry, G.H.R. and J. Svoboda. 1989. Floristic changes after experimental disturbance in a high arctic community: evidence for secondary succession. Abstract for the 74th Annual ESA Meeting, Toronto, 6-10 August. Bulletin of the Ecological Society of America 70(2): 140.

Other Publications

Bielawski, E.E. 1989. Tasealuk: Corridor Through Time. Monograph, Northern Heritage Society, Yellowknife, N.W.T., 216 pp.

Carbyn, L.N. 1989. Swift Foxes in Canada. Recovery Vol 1: 8-9.

Carbyn, L.N., D. Huisman, E. Street, and D. Anions. 1989. An analysis of the decline of bison in Wood Buffalo National Park from 1971 to 1981 and a review of the status to 1989. Canadian Wildlife Service and Parks Service Report, 268 pp.

Cavell, P.A. and H. Baadsgaard. 1989. The Kaminak Lake alkaline intrusion: Final Report to the Boreal Institute for Northern Studies. Department of Geology, University of Alberta, Edmonton, 30 pp.

Freeman, M.M.R., S.R. Braund, and M. Iwasaki. 1989. Contemporary socio-cultural characteristics of Japanese small-type coastal whaling. International Whaling Commission Report TC/41/STW1. Cambridge, England.

Freeman, M.M.R. (ed.). 1989. Kujira no bunka jinruigaku: Nihon no kogata engan kogei (The cultural anthropology of whaling: small-type coastal whaling in Japan). Kameisha, Tokyo (in Japanese), 216 pp.

Freeman, M.M.R. 1989. Kankyo hogo-sha toshite no hogei wo kaugaeru (A conservationist's perspective on the whaling problem). Tokyo: Sankei Shinbun, p. 5 (in Japanese).

Goodwin, R. and R.L. Minion. 1989. Toward the establishment of a Canadian Polar Information System/Vers la mise au point d'un système canadien d'informations polaires. Report of a Workshop sponsored by the Department of Indian Affairs and Northern Development, Canada. Boreal Institute for Northern Studies and Arctic Institute of North America. June 1989.

Mackawer, M., L.E. Ehler, and J. Roland (eds). 1989. Critical Issues in Biological Control. Dorset: Intercept Publishers, 522 pp.

McCormack, P.A. 1988-1989. Northwind Dreaming: Fort Chipewyan 1788-1988. Exhibit Catalogue and feature exhibit (3,000 square feet) commemorating the bicentennial of the founding of Alberta's oldest permanently occupied community and celebrating the lives of the Indian, Metis, and non-Native peoples who have made their homes there for 200 years and longer. Over 400 artifacts, many borrowed

from collections in Canada, U.S., and Scotland, running September 1988 to September 1989. Provincial Museum of Alberta.

McCormack, P.A. 1989. Dr. Robert Bell: Geologist and Collection. One case display. Provincial Museum of Alberta.

McCormack, P.A. 1989. Douglas Light Collection. Temporary display prepared for the Alberta Historical Resources Foundation, Edmonton.

Minion, R.L. and R. Goodwin. 1989. Questions and answers about a Canadian Polar Information System/Questions concernant un système canadien d'informations polaires. Report to the CPIS Committee. Boreal Institute for Northern Studies and Arctic Institute of North America. March.

Minion, R.L. and R. Goodwin. 1989. Interim report on subject and geographic access methods for a Canadian Polar Information System/ Rapport préliminaire sur les méthodes d'accès sur sujet et sur région géographique pour un système canadien d'informations polaires. Boreal Institute for Northern Studies and Arctic Institute of North America. December 1989.

Wall, D. 1989. Alberta multicultural policy: a principled approach. Policy Options: 8 pp.

Wall, D. 1989. Alberta Native policy: a descriptive review. Report submitted to the Alberta Advisory Committee for Studies in Education, December 1989. 55 pp.

Wein, E.E. and J.H. Sabry. 1989. Nutrient intakes and use of country foods by Native Canadians near Wood Buffalo National Park. Report to Band Councils and Local Agencies. 50 pp.

Wein, E.E. and J.H. Sabry. 1989. Nutrient intakes of students eating three meals daily in Breynat Hall Cafeteria. Report to Arctic College, Thebacha Campus, Fort Smith, N.W.T., 9 pp.

Theses Resulting from Research Jointly Sponsored by the Institute

Boag, Thomas David. 1989. Growth and fecundity of burbot, *Lota lota* L., in two Alberta Lakes. M.Sc. Thesis, Department of Zoology, University of Alberta, Edmonton, 100 pp.

Dunn, Peter O. 1989. The maintenance of monogamy in black-billed magpies and tree swallows. Ph.D. Thesis, Department of Zoology, University of Alberta, Edmonton, 114 pp.

Harwood, Lois Anne. 1989. Distribution of ringed seals in the southeast Beaufort Sea during late summer. M.Sc. thesis, Department of Zoology, University of Alberta, Edmonton, 131 pp.

Hasley, Linda A. 1989. Sedimentology and development of the Grande Prairie dune field, Alberta, Canada. M.Sc. Thesis, Department of Geology, University of Alberta, Edmonton, 173 pp.

Giberson, Warren G. 1988 (released 1989). Aluminum tolerance of *Betula papyrifera* Marsh. on naturally acidic soils. M.Sc. Thesis, Department of Botany, University of Alberta, Edmonton, 119 pp.

Ingram, Grant C. 1989. An insider's view of the Woods Cree cursing system: an anthropological analysis. M.A. Thesis, Department of Anthropology, University of Alberta, Edmonton, 139 pp.

Jacobson, Toni-Lynn. 1989. Ecology of a population of stunted yellow perch (*Perca flavescens* Mitchill). M.Sc. Thesis, Department of Zoology, University of Alberta, Edmonton, 135 pp.

Liverman, David G.E. 1989. The quaternary geology of the Grande Prairie area, Alberta. Ph.D. Thesis, Department of Geology, University of Alberta, Edmonton, 360 pp.

Park, R.W. 1989. Porden Point: an intrasite approach to settlement system analysis. Ph.D. Thesis, Department of Anthropology, University of Alberta, Edmonton, 332 pp.

Shaw, Jacqueline F.H. 1989. Potential release of phosphorus from shallow sediments to lakewater. Ph.D. Thesis, Department of Zoology, University of Alberta, Edmonton, 172 pp.

Stenton, Douglas R. 1989. Terrestrial adaptations of neoeskimo coastal-marine hunters on Southern Baffin Island, N.W.T. Ph.D. Thesis, Department of Anthropology, University of Alberta, Edmonton, 402 pp.

Von Gaza, Peter. 1989. Image enhancements for mineral exploration. M.Sc. Thesis, Department of Geography, University of Alberta, Edmonton, 76 pp.

Wein, Eleanor E. 1989. Nutrient intakes and use of country foods by Native Canadians near Wood Buffalo National Park. Ph.D. Thesis, Department of Family Studies, University of Guelph, Guelph, Ontario, 230 pp.

Conferences and Workshops Program

The Institute is involved in the planning and administration of workshops, seminars, and conferences with interdisciplinary themes.

Conferences and Workshops Committee
Dr. W.C. Mackay, Professor of Zoology — Chair
Dr. D. Wall, Adjunct Researcher, Boreal Institute and Alberta Education, Northern Education Program
Dr. L.N. Carbyn, Adjunct Researcher, Boreal Institute and Biologist, Canadian Wildlife Service
Ms. S. Rogiani, Conferences and Workshops Co-ordinator, Boreal Institute

This program continued through 1989 in the same vein as it had in previous years. The majority of resources allocated for the program in 1989 were devoted to small informal workshops designed to provide a forum for researchers to develop multidisciplinary proposals and for the exchange of information among researchers of a same discipline. Other workshops were held in conjunction with sponsored projects outlined in the section entitled "Research Program."

Fifth Annual Applied Aquatic Studies Workshop

February 21-22 (Contact Person: W.C. Mackay)

This year's workshop theme was "Lake and River Restoration." The principal workshop topics included: Lake rehabilitation, Drinking water and urban water management, Toxicology and treatment of pulp mill effluents, The limnology of brownwater systems. The purpose of this annual workshop is to bring together aquatic scientists from university, government, and industry to discuss, in a technical context, current issues in aquatic science in Alberta.

Sponsored by: Alberta Environment, Alberta Environmental Centre, Boreal Institute for Northern Studies, Alberta Energy and Natural Resources, University of Alberta, Alberta Recreation and Parks.

Organizing Committee: W.C. Mackay, E.E. Prepas (University of Alberta), S. Rogiani (Boreal Institute), E. Baddaloo, C. Brodie (Alberta Environment), and S. Dalton, B. Free (Canadian Society of Environmental Biologists).

Networking and External Relations

Networking and External Relations Committee
Dr. G. Dacks, Professor of Political Science — Chair
Dr. S. Bayley, Associate Professor of Botany
Ms. S. Halmy, Public Affairs Office
Mr. M. Robb, Public Affairs Office
Ms. B. Jones, Networking and External Relations Officer, BINS

Local

On the local level, the Northern Biological Research Seminar Series was initiated several years ago to raise the profile of northern biological research on campus and to increase interaction between practicing professional biologists and academic researchers. The Social Sciences Seminar Series established in 1986, focuses on issues in the Social Sciences and Humanities and emphasizes discussions of topical issues of particular concern to Northerners. One day was devoted to the Institute's Open House in 1989 on September 22 for the benefit of individuals on campus. The 1989 Open House highlighted multidisciplinary northern research and the collaboration between the Boreal Institute and other agencies and groups working in the North. Besides research displays, the Open House featured books and publications available for sale, handouts, and time to discuss possible research collaboration projects with other northern researchers.

National

To foster continuing ties with sister organizations, the Boreal Institute continued the traditional invitation to the Arctic Institute of North America and on October 30, the 3rd annual joint meeting of the Boreal Institute for Northern Studies and the Arctic Institute of North America was held. In addition to the staff from both Institutes, special guests from outside Alberta included Dr. Rainer Englehardt and Mr. Harald Finkler of the Department of Indian Affairs and Northern Development, Mr. Doug Heyland, Executive Director of the Science Institute of the Northwest Territories, and Mr. Robert G. Williamson of the Northern Studies Group at the University of Saskatchewan. Invited participants from the University of Alberta included Dr. Touraj Nasseri, President of the Centre for Frontier Engineering Research; Dr. Robert L. Busch, Associate Vice-President (Research); Dr. Keith Denford, Chair, Boreal Institute Advisory Board and Dr. Gurston Dacks, Chair, Networking and External Relations Committee.

The Institute maintained its membership in the Association of Canadian Universities for Northern Studies.

International

The Institute promotes links with sister circumpolar research organizations through publication and library exchange programs, and other general networking activities.

During the week of March 6-10 the Boreal Institute and the Department of Anthropology hosted five scholars from the Centre for Arctic Cultural Research, Umea University, Sweden. Their visit further implemented the agreement to promote academic exchanges between BINS and CACR. General and focussed research presentations were held and guests met with University of Alberta staff and students with similar research interests or who wished to learn more about academic and research opportunities at Umea University. Guests were: Dr. Noel Broadbent, Director, CACR; Dr. Roger Englemark, Professor, Swedish Research Council; Dr. Lars Forsberg, Lecturer, Department of Archaeology, Umea University; Dr. Roger Kvist, Research Associate, CACR; and Mr. Lars-Goran Spang, Ph.D. Candidate and Curator, Wassterbottems Museum.

Dr. Leo Polishchuck, Institute of Economics and Industrial Engineering, Siberian Branch of the USSR Academy of Sciences, visited the Boreal Institute on September 22 to discuss co-operative research project links and library exchanges.

Dr. Louwrens Hacquebord, Director of the Arctic Centre, University of Gröningen, The Netherlands visited the Institute from December 28 to November 3. The Arctic Centre is the only such institute in the Netherlands. During his visit the possibility of other scholarly interactions between the two institutes were explored.

Dr. Veijo Ilmavirta, Director, Arctic Centre, University of Lapland visited from November 28-29 to discuss areas of research co-operation. Dr. K. Kauppinen also visited earlier in the year to discuss issues of mutual interest.

Finances

Funding for the Institute operating and equipment is provided by direct and indirect allocations from the University of Alberta and from external grants and contracts.

Direct allocations from the University to the Institute in 1989-1990 were as follows:

Salaries and Benefits (academic and non-academic)	$587,700
Boreal Alberta Research Fund*	$160,000
Operating Budget (non-salary)	$ 42,500
Capital Equipment	$ 31,000
Computing Soft funds	$ 14,000
Capital Renovations	$ 13,000
Travel fund allocation	$ 5,750

*Conditional grant from the Government of Alberta, now part of the Institute's annual base funding

Operating and equipment funds are divided among the research programs, approximately as follows: Research (80%), Publications (10%), Conferences and Workshops (5%), and Networking (5%).

Expenditures for research included the development of library and laboratory resources and services for researchers. A large proportion ($103,000) of the Boreal Alberta Research Fund was used to support graduate students and other researchers through grant programs.

Indirect support from the University of Alberta to the Institute is provided in terms of use of facilities, and research salaries that are included in the operating budgets of other departments. This is a substantial, continuing financial commitment of the University to northern research.

External sources of funding (i.e., projects and research) awarded to the Institute include:

Department of Indian and Northern Affairs, Ottawa	
Northern Studies Training Grants	$62,000
Government of the N.W.T., Yellowknife	
Dene Language Scholarship	$10,000
S.T.E.P. Program	$ 7,480
S.E.E.D. Program	$ 5,760
Province of Alberta	
Matching funds (equipment)	$ 5,831
Department of Indian Affairs and Northern Development, Ottawa	
Economic and Resource Development Division	$13,000
Economic and Resource Development Division	$30,000
Social and Cultural Development Branch	$ 5,000
Alberta/Asian Culture	
Hokkaido/Alberta Exchange	$ 3,500
Research/Science and Technology (Freeman/Steber)	$ 2,000
Alberta/Asia Culture (co-ordinator: Dr. M.M.R. Freeman)	
International Project of Winter Mobility Problems	$25,000
Japan Cetacean Research Institute	$ 7,500
Province of Alberta—Matching Grant (Dr. L.N. Carbyn)	
World Wildlife Fund (equipment)	$10,000
Swift Fox Society Grant (Carbyn)	$ 550

Boreal Library

Department of Indian Affairs and Northern Development, Ottawa	
Canadian Polar Information System (share of grant with AINA)	$10,000
Department of Indian Affairs and Northern Development, Ottawa	
Canadian Polar Information System	$10,000
A.E.E.I.F. Matching Grant	
Canadian Polar Information System	$ 5,650
Employment Skills Program	$ 2,700

Conferences

(Note: all conferences and workshops are self-supporting)

Applied Aquatic Studies Workshop	$ 3,340
Fort Chipewyan Bi-Centennial Conference (from various sources)	$68,545
A.E.E.I.F. Matching Grants	
Fort Chipewyan Conference	$12,600
Knowing the North Conference	$ 500

Publications

Fort Chipewyan Bi-Centennial Conference Proceedings	$15,500
Perinatal and Infant Mortality Study, Donner Canadian Foundation.	$ 5,000

External support for research projects was raised largely on the research strengths of individuals. Such support is acknowledged under the section entitled "Current Research Projects" where individual support is listed. Young researchers are supported by NSERC or SSHRCC Post-Doctoral Fellowships; established researchers support their programs through operating and equipment grants from the major national funding agencies, and other granting agencies and foundations as well. Total funding attracted is approximately one-half million dollars. These funds are largely administered through disciplinary departments with which the researcher is affiliated.

Appendix A: Biological Sciences Seminar Series

Organizer: Dr. S. Boutin, Zoology and Boreal Institute

January 23: Walt Klenner. The Ecology Group, Department of Zoology, University of British Columbia. Territorial behaviour, food availability and population dynamics of the red squirrel.

January 30: Arlen Todd. Alberta Forestry, Lands and Wildlife, Fish and Wildlife Division, Canadian Wildlife Service. Some problems and progress in humane trap research and development.

February 6: Becky Sjare. Department of Zoology, University of Alberta. Walrus vocalization and behaviour.

February 13: Doug Heard. Department of Renewable Resources, Government of the Northwest Territories, Yellowknife. South Hampton Island caribou: Management of an erupting population.

February 27: Sandra Lee. Department of Zoology, University of Alberta. Third-egg neglect in the herring gull.

March 6: John Hogenbirk. Department of Botany, University of Alberta. Climate change and a northern wetland: fire, drought and plants.

March 13: Milton M. R. Freeman, Department of Anthropology and the Boreal Institute, University of Alberta. Mired in contradiction: research whaling, coastal whaling and the 1982 moratorium.

March 20: Paul Paquet. Behavioural ecology of wolves and coyotes.

April 3: Sandra Zohar, Department of Zoology, University of Alberta. The overwintering behaviour of parasitized amphipods.

April 10: Greg Henry, Department of Geography, University of Alberta. Reaction of vegetation to devastating overgrazing: The case of Rideout Island, N.W.T.

Appendix B: Social Sciences Seminar Series

Organizer: Dr. L. Lange, Philosophy and Boreal Institute

January 31: Patricia McCormack, Curator of Ethnology, Provincial Museum, Alberta. The Orkney Islands and the northwest fur trade.

February 7: Gurston Dacks, Department of Political Science, University of Alberta. The quest for a northern oil and gas accord.

February 16: Ken East, Superintendent, Wood Buffalo National Park, Ft. Smith, N.W.T. The future of bison in Wood Buffalo National Park.

February 28: Don Kuiken, Department of Psychology, University of Alberta. Cross-cultural comparisons of significant dreams.

March 14: Lynda Lange, Department of Philosophy and Boreal Institute, University of Alberta. Take our work: Ethical and methodological parallels in Women's Studies and Native Studies.

March 21: Linda Schultz, Educational Foundations, University of Alberta. Achieving equilibrium in a changing environment: Aboriginal masks of Alaskan Eskimos and eastern Arctic Inuit.

March 28: Dennis Wall, Alberta Education and Boreal Institute. Decision making in Northlands School Division in the context of Alberta Government Native policy.